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ABSTRACT

This communicative intent curriculum attempts to demonstrate expressive communication skill acquisition training for students with severe/profound mental impairments at a developmental level of birth to 10 months, and outlines an expressive communication sequence for people who have a "no understandable speech" prognosis. The curriculum establishes a base for eventual sophisticated communication interchange; establishes a communication pattern individual to each student; trains others to listen to, respond to, and respect the communication system of that student; shares the information with caregivers and other staff agencies; and begins skill training to bring the student's means of communication further along the communication continuum. The techniques most frequently used to achieve the goals are nurturing, play, positioning, and massage. The appendix contains a collection of overlays portraying the most frequent communication initiations, and five article reprints on the following topics: (1) communication control and choice; (2) comparison of adult-initiated versus child-initiated interaction styles; (3) prelanguage communication; (4) fostering communicative competence; and (5) choice making and autonomy among persons with severe disabilities. A resource list notes 14 books and articles, two videos, one cassette program, three human resources, four assessments, and two curriculums.(JDD)

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"Everyone Communicates!"

You Gotta Believe!

Expressive Communication Training at Pre Linguistic Levels

EC 232148

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"Everyone Communicates!"

A Curriculum and Resource Guide to Aid Development of Expressive Communication and Communication Interaction Skills

Neonate to 10 Months Functioning Level

"....if all my possessions were taken
from me with one exception,
I would choose to keep the power of
communication,
for by it, I would soon regain all the rest."

Daniel Webster

Ann Heler
Author and Collector of Resources
Wayne County Intermediate School District
1986

2nd Edition
1989

Wayne County, Michigan Intermediate School District
Board of Education

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William Simmons, Superintendent

DEDICATION

To everyone who believes in the power of
communication without words,
... in the essential value of all humans,
... in the wonderful world where we all
... "accentuate the positive!"

ACKNOWLEDGMENTS

Jan Graetz, Cecile Zacharias, Katy Palmer, Toni Brandt,
Ann Perrault, Greg Turner, Mary Dean Barringer,
John Eulenberg, Char Davis, Berdeva Moore,
Kevin Magin, the Title 1 "7", and ....

And particularly Jan Jarrell and her Mighty Mac.

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1. "Everyone Communicates!" Wolf Overlay Vocabulary Suggestions and Lesson Plan.
2. Communication Control and Choice - Bob Williams, TASH Newsletter, March, 1989 *
3 "Comparison of Adult-Initiated vs. Child-Initiated Interaction Styles with Handicapped Prelanguage Children". - Janet A. Norris And Paul R. Hoffman, Language, Speech and Hearing Services in Schools, Jan 1990, Vol. 21, pgs. 28-36. *
4. Prelanguage Communication for the Severely and Profoundly Handicapped -Sternberg, Battle, Hill. Journal for the Association of the Severely Handicapped, Fall, 1980, pgs. 224-233. *
5. "From Reflex to Symbol: Describing, Explaining, and Fostering Communicative Competence" -Dunst and Howe, Augmentative and Alternative Communication, 1986. Vol. 2, #1., pgs. 11-18. *
6. "Concepts and Issues Related to Choice-Making and Autonomy Among Persons with Severe Disabilities" -Guess, Benson, Seigel-Causey. Journal for Persons with Severe Handicaps, 1985, Vol. 10, # 2., pgs. 79-86. *

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Introduction And Purpose

INTRODUCTION and PURPOSE

Every human communicates from before birth until death. How often we forget this when speech is delayed due to accident, developmental disability, retardation, old age, muscle problems or sensory impairments.

The origin for the communicative intent curriculum was two fold: an attempt to demonstrate expressive communication skill acquisition training in classrooms dedicated to students labeled severely /profoundly mentally impaired and to outline an expressive communication sequence for those people who have a "no understandable speech" prognosis.

Many disciplines (language acquisition, linguistics, psychology with an emphasis on body language, specialists in mother-infant bonding and others) have done an enormous amount of work focusing on the period before understandable speech. In addition to the formal research, of course, are parents who have demonstrated clearly again and again that they do understand the communicative intent behind cries, *laughs*, sounds, changes in muscle tension etc. their children exhibit. (This is not even mentioning the people who can clearly understand their PET'S communication!).

This skill training sequence is a blend and mixture of this research.

It is my contention this communication acquisition sequence follows the conventional developing language sequence but, with different milestones and different skills that have to be high-lighted. An example is the very important role of the listener and the additional responsibility of being an "active" listener for a much longer period of time.

Although housed in conventional classrooms and school buildings, the techniques that seem often the most effective, are not conventional. A lot of touching, sustained proximal positioning by staff, prolonged eye contact and the emphasis on nurturing and acceptance make the activities in the classroom unique to these students.

Using these goals, techniques and strategies, we are going to:

a) establish a base for eventual sophisticated communication interchange.
b) establish a communication pattern individual to each student. We will answer the question "how does the student *communicate*?"
c) train others to "listen" to, respond to, AND respect the communication system of that student. The vocalizations and cries can be audio-taped and/or video taped to demonstrate technique and environment.
d) share the information, through reports, Communicative Intent Logs and tapes with caregivers, other staff agencies and institutions who service the student and his caregivers.
e) begin skill training to bring the student's means of communication further along the communication continuum.

The techniques most frequently used to achieve the goals are nurturing, play, positioning and massage. None of these activities are unfamiliar to classrooms. We are simply changing the staff's purpose. They now primarily observe and respond to the student's means of expression.

We are going to look for consistency in sound and/or behavior on the part of the student and at our responses. The consistency is needed so all concerned can have a basis for labeling those sounds and behaviors as that student's means of expressive communication.

Three givens run through all of this work:

1) acceptance of the student,
2) acknowledging the student's current functioning level,
3) believe the students are communicating.

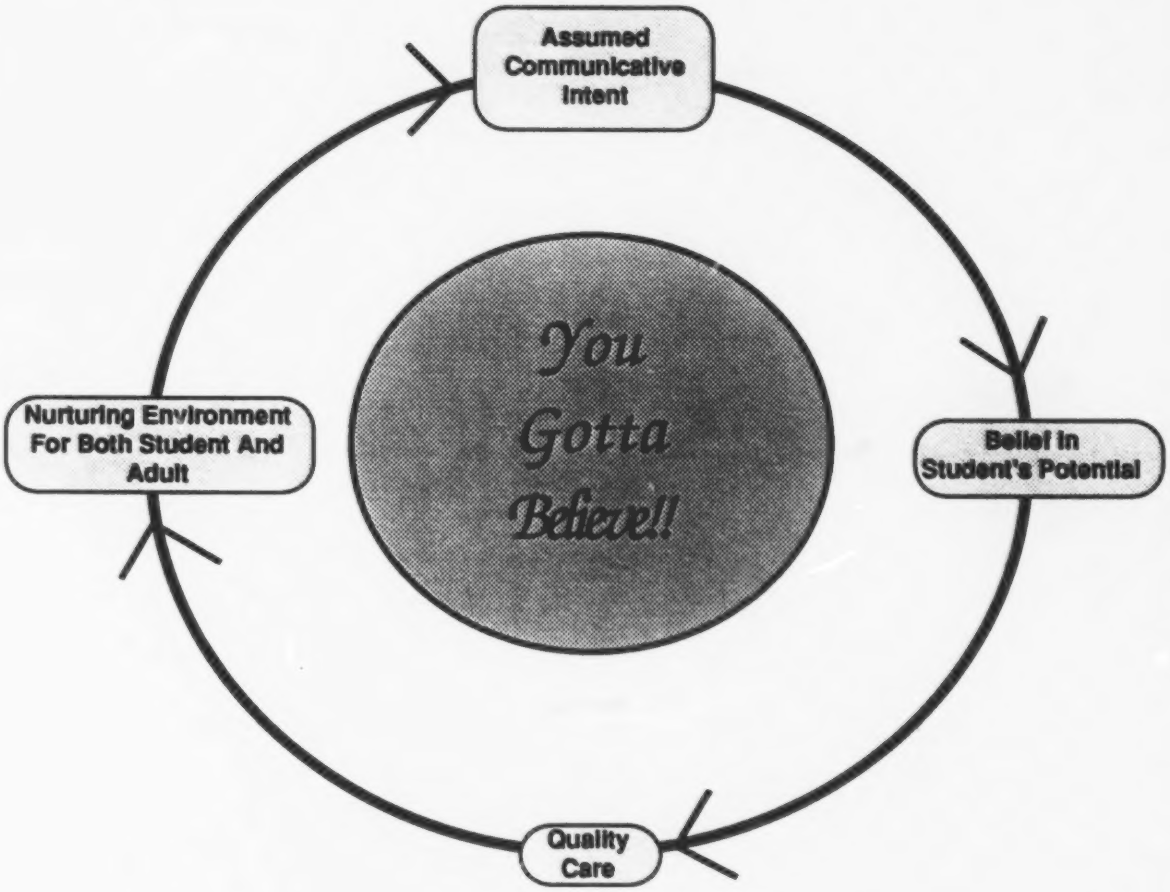
The students need the communication interaction model just as much as infants. They need that close (less than 15") face to face, body to body interaction to assist their orientation from internal to external stimulus. At this level, the priority is developing relationships with each student such that the relationship inspires within each student the desire to continue "contacting" adults and internally incorporating the communication interaction mode.

Remembering always at this level, that everything we do is interconnected. The cognitive, emotional and communicative growth are especially intertwined. The student's integration of this world is not sophisticated at this stage.

The instructional objectives are in developmental sequence, the first being the most basic. This curriculum deliberately ends at the 8-10 month stages. At that point, the interactive skills are well enough established to allow traditional communication skill training techniques to be used successfully: Van Dijk's work, Jerry Mahoney's turn taking work, traditional language acquisition training etc.

On the title page and at the bottom of several pages, I have placed quotes, poems and small articles. These are all for a reason - to help set the tone, the atmosphere, the special environment that these students require.

Communicative Intent Circle



Assumed Communicative Intent

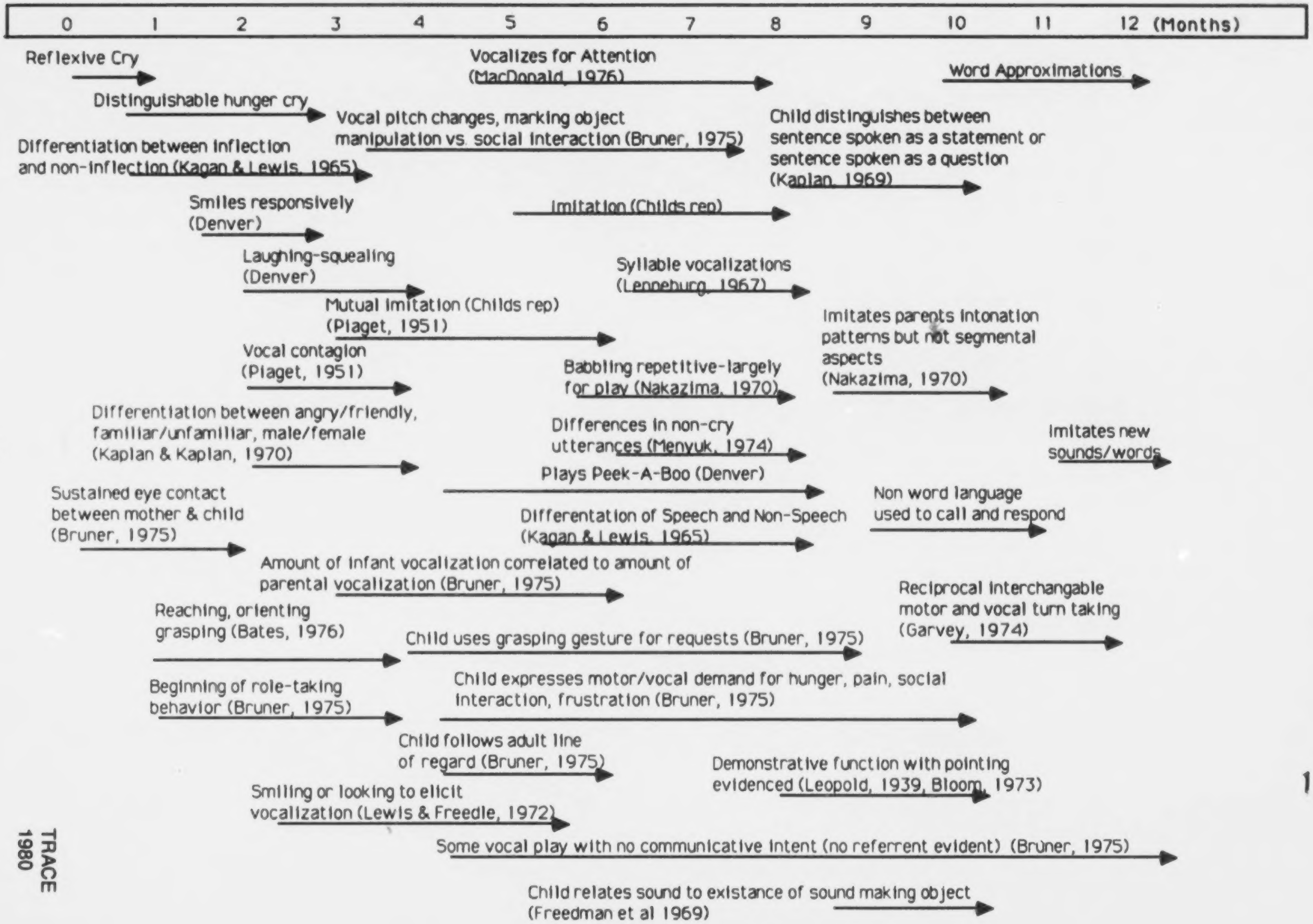
Belief in Student's Potential

Quality Care

Nurturing Environment For Both Student And Adult

You Gotta Believe!!

Developmental Sequence of Speech
Ages Are Approximate



EXPRESSIVE COMMUNICATION CONTINUUM

An Emphasis on Communication Interaction Development

Means Of Communicating	INTENTS AND WHOLE BODY GESTURES Assumed Communicative intent by caregiver. Caregivers model interactive behavior. →	INTENTS AND EXTREMITY GESTURES AND VOCALIZATIONS →	GESTURES AND VOCALIZATIONS AND ALTERNATIVE/AUGMENTATIVE AIDS →	SOPHISTICATED MEANS OF COMMUNICATION BY ANY MEANS
Age Of Onset	0-4 Months •	4-10 Months	10-17 Months	17 Months
Some Specific Actions	1. Differentiated cries 2. Sustained eye contact with primary caregiver. 3. Smile 4. Different states of tension in body/extremities in response to people and environments. 5. Whole body positioning. 6. Head turning 7. Eye gaze at people 8. "Lift Me" gesture 9. Sounds just before cry 10. Differentiated vocalizations 11. Laughs 12. Begins to vocalize in response to adult vocalization	1. Larger repertoire of vocalization vocabulary. 2. Larger repertoire of "cry" vocabulary. 3. Sustained eye gaze 4. Sustained touching 5. More quickly relaxes with known caregiver. 6. A lot of vocal play before cry 7. Intonations 8. Visible changes in tension and positioning with just auditory cues. 9. Extremity gestures more consistent. 10. Eye gaze extended to objects "action around them".	1. Sustained interest in objects 2. Frequently have favorite people 3. Exploring environment 4. Vocalization intents are clear 5. Gestures more sophisticated AND often accompained by pulling adult to wanted thing AND eye gaze. 6. Beginning to build vocabulary with augmentative/alternative aids. 7. Demonstrates multiple schemes to achieve goals. 12 Mos. 8. Uses the computer as a functional tool. 15 Mos.	1. Vocabulary growing 2. Spontaneous use of vocabulary. 3. Can use more than one picture/object at a time 4. Vocabulary growing at a predictible rate. 5. Perform abstract tasks and complex imitation skills. 18 Mos.
DEVELOPMENTAL STAGES	1. Trust 2. Bonding > Secure that life will be sustained. * VOCA should be considered at this time.	1. Onset of awareness of adults as providers 2. Onset of object permanence 3. Onset of separation of self from space. 4. Onset of imitation.	1. Object permanence 2. Cause and effect 3. Beginning of curiousity 4. Establishing patterns of relating to others. 5. Imitation skills.	1. Stabilization of own power to control environment. 2. Attempts to enlarge universe. 3. Awareness of different kinds of people. (less helpful, more helpful, peers)

Heler - 3/86
"Everyone Communicates!"

COMMUNICATION DEFINITIONS

A message understood from one person to another.

Communication is the act of sharing information, desires and ideas. Humans communicate in many ways: body movement, facial expressions, touching, gesturing, vocalizing, speaking, writing, and by use of alternative and augmentative means (signing, communication boards, voice output communication equipment).

Behind all of the efforts to design a means of communication or to identify a particular student's way of communicating, is the one thought: PEOPLE WITH THE POWER OF EXPRESSIVE COMMUNICATION HAVE THE POWER TO COMMAND AND DEMAND BECAUSE THE FUNCTION OF COMMUNICATION IS CONTROL.

> **"Communication is the most efficient and organized method we have for transmitting information about ourselves, our world, and others. Relaying this information is necessary for all people to achieve a level of independence and to function effectively in the environment. Communication is essential to growth, enabling people to develop a degree of control and autonomy in their daily lives.**
>
> **This goal of independence must be considered in all levels of communication and language intervention. Those individuals possessing a non symbolic repertoire must be allowed to experience effective control in their interactions in the environment. The quality of their non symbolic repertoire needs to incorporate a variety of understandable, functional messages. The intended receivers must be sensitive and responsive to these unconventional signals so that effective exchanges can occur."** [1]

Ellin Siegel-Causey
Barbara Ernst

1. Enhancing Interactions Between Service Providers and Individuals Who Are Severely Multiply Disabled: Strategies for Developing Non-Symbolic Communication. 1988.

RATIONALE FOR EXPRESSIVE COMMUNICATION OBJECTIVES FOR STUDENTS FUNCTIONING IN THE NEONATE TO 10 MONTH RANGE

---

1. Readily understood expressive communication is power and control.

2. Research indicates that communication is present at neonate level. All humans are trying to learn how to communicate more efficiently. Language and skilled interactive communication techniques are acquired in the process of humans learning to become more effective communicators.

3. Expressive communication goals, written into the "official" programming plans increase parent and staff awareness of the students as HUMANS who CAN and DO communicate.

4. A planned program of expressive communication helps school staff and parents change their perception of "communication". It helps break away from the traditional use of the word communication meaning understandable speech, and it opens up the possibilities of exploring communication (as opposed to speech) modes including body gestures, VOCAs, consistent cries, vocalizations, etc. It begins to train every one to "look for communication".

5. There is a tendency to regard these students as "things" to be cared for, but not as humans who are constantly learning, as we all are, but, at a much reduced rate. Benign neglect, thoughtlessness and verbal abuse are prevalent because of this perception. Deliberately searching for communicative intent AND "listening" for AND acting upon the communicative intents leads to respecting a student's interactive attempts absolutely changes this negative "thing" perception.

6. Understanding a student's communication system allows parents to truly feel their children CAN indicate that they do "know", do "trust" and can express love.

7. It establishes expressive communication as one of the educational goals for these students and by that establishment, a priority for all students above this cognitively young level.

8. As educators, we believe there is potential within every student. One of our tasks is to help make that intelligence visible and viable.

TEACHIN [illegible]

GOAL SEQUENCE INFORMATION

The goals are divided into 4 areas: being acted upon, acting upon, sensory awareness and vocalizations/augmentative voice output aids.

The goals are in rough developmental order per series.

Goals from Series A, C and D can be selected simultaneously. The goals from Series B should follow Series A.

TO THOSE USING THE WASHTENAW SMI/SXI CURRICULUM

These goals can be incorporated on the IEP by using Communication, Annual Goal #1- Acquires Functional Pragmatic Language Skills, IO-A-Develops early communication/interaction skills.

RATIONALE FOR SERIES A OBJECTIVES

Basic expressive communication (also called pre-linguistic communication) begins with the student being comfortable with other humans.

Releasing the defensive body postures and tentatively reaching out by body pressure, gesture and facial expression to express realization of something warm and comforting are some of the very first signs of desire and attempts by the student to communicate.

This communication is also the first visible attempts to express love, security, trust and want.

Without establishing a sense of security and trust, humans will make no further attempt to "contact" other humans. They become afraid to make themselves anymore vulnerable by any other attempt to "reach out and touch someone".

These goals represent the essential "bonding" between humans. This MUST occur. Until the student internally accepts that his being is in a non-threatening environment, he will NOT progress interactively.

RESOURCES SPECIFIC TO THIS SERIES

1. The Secret Language of Your Child
   David Lewis
   Berkley Books, New York, 1978

2. Baby Massage - Parent-Child Bonding Through Touching
   Amelia Auckett
   Newmarket Press, New York, 1981

3. First Feelings - Milestones in the Development of Your Baby and Child
   Greenspan, Stanley
   Viking, New York, 1985

4. "Mother's Speech To Children Learning Language"
   Snow, C.E.
   Child Development, 1972, Vol. 43

5. "An Occupational Therapy Protocol for Assessing Infants and Toddlers Who Fail to Thrive"
   Rick Denton
   The American Journal of Occupational Therapy, May 1986, Vol. 40 #5

See Bibliography for additional resources.

> The greatest sense in our body is the sense of touch. It is probably the chief sense in the process of sleeping and waking; it gives us our knowledge of depth or thickness and form; we feel, we love and hate, are touchy and are touched, through the touch corpuscles of our skin.
>
> J. Lional Tayler, The Stages of Human Life
> 1921, p.157

0 - 10 MONTH EXPRESSIVE COMMUNICATION OBJECTIVES

OVER ALL GOAL: The student will demonstrate early communication or interaction skills.

SERIES A OBJECTIVES

ANNUAL GOAL: The student will indicate awareness of presence of nurturing adults/ accepting environment.

INSTRUCTIONAL OBJECTIVES

1. The student will tolerate an adult in close proximity: adult near him, walking around him when he is in an enclosed space (crib or playpen), or "unprotected" (wheelchair, mat, etc.) .

   observation

2. The student will tolerate a variety of materials next to his skin (cotton, polyester, knot, terry cloth, disposable diapers, etc.).

   observation

3. The student will tolerate a variety of bindings (hat ties, elastic, correctly fitted diaper, etc.).

   observation

4. The student will tolerate being handled/lifted.

   observation

5. The student will quiet when spoken to in a familiar/friendly tone.

   observation

6. The student will smile in response to adult attention.

   observation

7. The student will relax extremities when held.

   observation
   within 3 minutes of onset of activity
   10 consecutive times

8. The student will relax and change facial expression when held.

   use #7 criteria

9. The student will follow moving person with their eyes.

   observation

10. The student will initiate a smile when an adult is near.

    observation

11. The student will look at staff's face/hands during communication interaction modeling.

    use #7 criteria

12. The student will attempt to reach up to explore caregiver's face.

    use # 7 criteria

13. The student will open fists when held.

    use # 7 criteria

14. The student will relax whole body when held and/or quiets when held.

    use # 7 criteria

15. The student will indicate awareness of being away from the body of an adult when held or when adult changes position.

    student moves body and/or facial expression changes;
    student looks or turns his face toward adult's face
    and use # 7 criteria

16. The student will use the universal "up" or "lift me" gesture when approached.

    both arms/upper body attempt to reach up to the adult
    WHILE looking at the adult
    and use # 7 criteria

The procedure for evaluation of the IOs is documented staff observation of student performance. This evaluation of student performance occurs on a regular, ongoing basis throughout the school year.

Strategies and Techniques for Series A and B Objectives

ENVIRONMENT

Series A and B need a special setting at first. Because these goals represent that intense one to one bonding, the classroom or at least a portion of the classroom should try to replicate a "private place". The place where the teacher and student (s) are alone and just concerned with one another. The whole rest of the world for that special time is unimportant.

A classroom would attempt to duplicate that nurturing atmosphere and time by:

1. - having the classroom be as QUIET as possible. Radios, TVs, address systems are off. If there are other groups in other parts of the classroom, they are now doing tasks or activities that are low key. Use screens to further separate the groups.

2. - the area should be PLEASANT SMELLING. Using the same, pleasant incense helps set the mood for a relaxed, calm period. As the incense permeates the air, after a number of sessions, it is not uncommon to see the students begin to relax before any positioning or touching has occurred (the phenomenon of anticipation). Spiced Apple and Jasmine are favorite smells. Don't use pine. Too many students associate the smell with disinfectant and cleansers used in nursing homes and institutions.

3. - the room should be WARM, at least 70 degrees. No one can relax when they are cold.

4. - use clean, warm, sweet-smelling cotton old soft SHEETS or thermal weave blankets to wrap and cuddle the students, or place on the furniture. Many people have reactions to wool, don't use it. Wash the sheets and blankets many times to insure that the material has lost any of the "new" stiffness or resistance.

5. - having COMFORTABLE PLACES for staff to sit while sitting next to or holding the students. With the larger students, staff may have to sit on mats or in bean bags and just have the students lean against them. The key is to have staff be as comfortable and relaxed as possible. The students should feel the relaxation of the staff member. (See illustrations on pages 26-28).

6. - not allowing any INTERRUPTIONS at this time. A 20 minute time period daily for this work is often enough. Putting a notice on the classroom door keeps interruptions to a minimum.

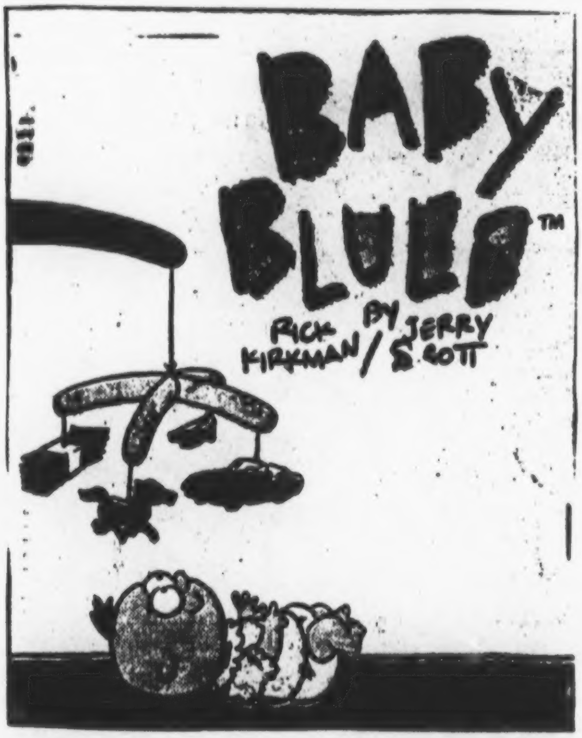
7. - having soft, non-intrusive MUSIC in the background helps keep the environment calm. Many people use meditation music that has soothing and melodic tones and sounds. Research has shown that sounds can induce relaxation and lower heart rate and blood pressure because the body does not have to attempt to match it's rhythm with competing rhythm.

8. - everything is done SLOWLY and in a relaxed manner. Present stimuli slowly. Take time for the student's reactions to present themselves.

9. - AGE APPROPRIATE everything! Those who are 18 years old do NOT need to be subjected to "Care Bears".

10. - use NOTHING ESOTERIC. One of our goals is to encourage parents and caregivers to duplicate our techniques. Use equipment that can be bought in the community.

Let's Talk Age Appropriate!


BABY BLUES™
BY RICK KIRKMAN / JERRY SCOTT

Strategies and Techniques to Augment the Training Sessions for Series A and B Objectives.

STUDENT - STAFF

1. - student and staff sit next to one another as close as age appropriate. If there is more than one student (never more than three, please), have the students sit, lounge, lay so that each is touching one another. The issue is the warmth of another human body. SEE illustrations on following pages.

2. - if there is more than one student, don't split up the 20 minutes. Rotate the "special student spot" daily. It is enough for the other two students just to be in that quiet, nurturing spot and enjoy the spill off of the calm atmosphere.

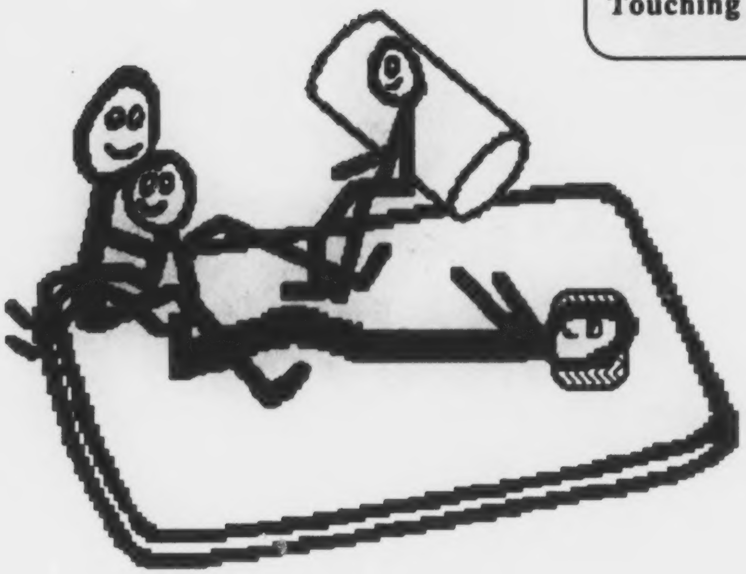
3. - with the student who is receiving the 20 minute session, have staff and student faces not more than 15" away from one another. Research has shown that facial awareness of primary caregivers is one of the first "contacts" that the cognitively young initiate.

4. - gently stroke and massage the student. (Age appropriate touches obviously). SEE the massage section, pages 34-37. Generally, the most important thing to remember is to stroke and do the action slowly. Consult the Physical Therapist or Myomassologist if you have any questions.

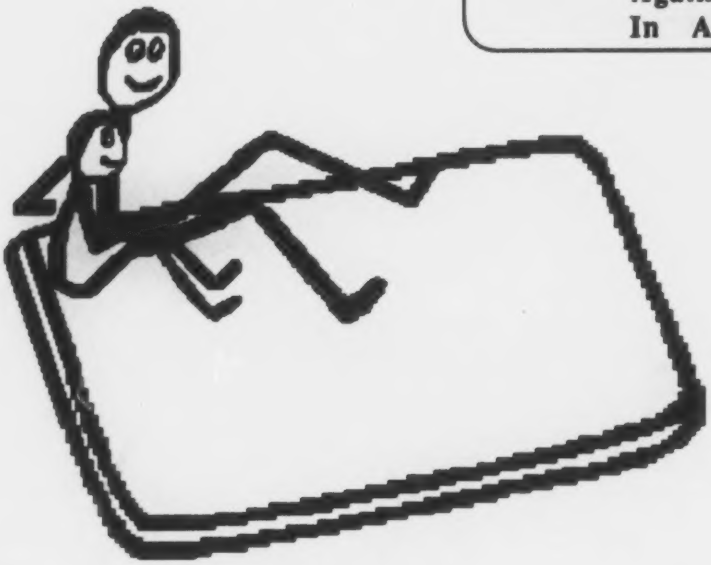
5. - speak softly and slow your rate of speech employing "motherese". Motherese is mother/child language. It is a specific register in which mothers instinctively talk to their young. It is that language and interchange in the communication network that a mother adopts when the baby is not yet at a stage where he can answer her by gesture or vocalizations. The actions of the baby is treated as intentional and communicative acts. The mother is the conversation initiator and the responder. She pauses appropriately between both parts of the conversation. She remarks on the "answers" of the child. She uses a defined intonation and rhythm. This is different from that used with responding humans. This is the first example of role modeling (conversational turn-taking) that a child encounters. It is developmental. It begins at the most fundamental level and grows more complex as children advance in ability to understand.

By incorporating this into our interaction with these students, we are pulling intentionality out of the previously believed to be pre-intentional student, thereby deliberately blurring the distinction between the communicative intent and the "traditional" communicative student.

This communication interaction component is very, very important. Research has indicated that without this interchange, children are language delayed even though they have the muscle control for speech and obvious cognitive ability.

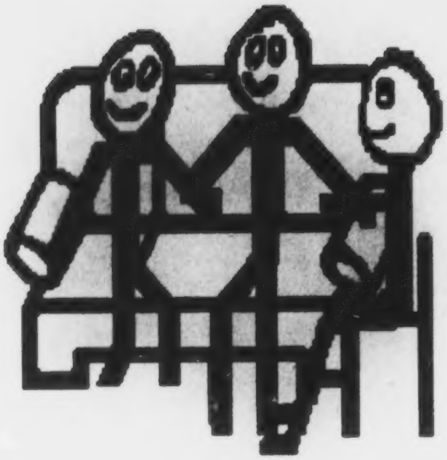


Group On A Mat
*
Touching One Another

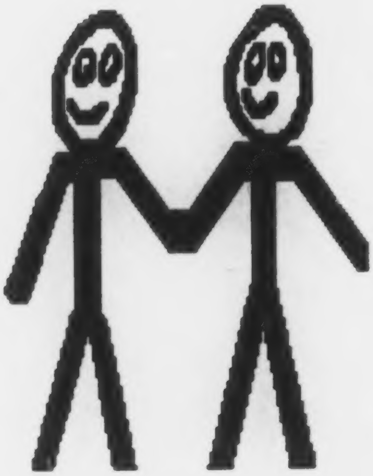


Sitting Side By Side On A Mat
Against A Wall
In A Classroom

Designed by Jan Jarrell, ADAMLAB using the Boardmaker from Mayer-Johnson

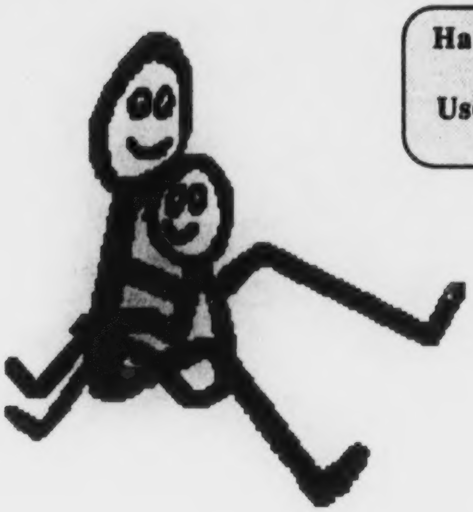


Group In A
Lounge Type Area
&
Touching One Another



If The Student Walks
Around, Walk With Him.
Touch Him Using A
"Good Buddy"
And/Or
Arm On Arm Touch.

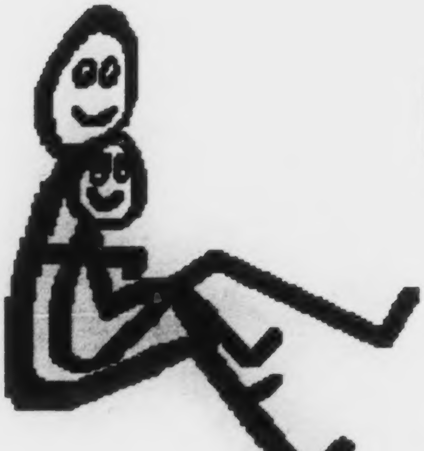
Designed by Jan Jarrell, ADAMLAB using the Boardmaker from Mayer-Johnson



Have Student Sit Facing Staff

*****

Use Bolsters, Rolls, Anything For Comfort.



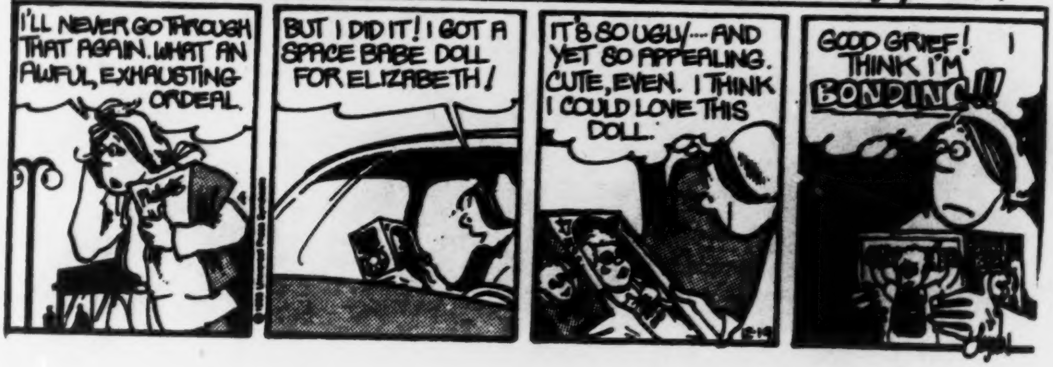
Legs Intwined, Chest To Back, Adult Arms Around Student

Designed by Jan Jarrell, ADAMLAB using the Boardmaker from Mayer-Johnson

Hugging.. The perfect cure for whatever ails you

No movable parts
No batteries to wear out
No periodic check-ups
Low energy consumption
High energy yield
Inflation proof
No monthly payments
No insurance requirements
Theft proof
Non-taxable
Non-polluting
And, of course, fully returnable.
HUGGING IS HEALTHY!
It relieves tension
Combats depression
Reduces stress
Improves blood circulation
It's invigorating
It's rejuvenating
It elevates self esteem
It generates good will
It has no unpleasant side effects
It is nothing less than a miracle drug!

FOR BETTER OR FOR WORSE By Lynn Johnston 12-19-86 DFP


I'LL NEVER GO THROUGH THAT AGAIN. WHAT AN AWFUL, EXHAUSTING ORDEAL.
BUT I DID IT! I GOT A SPACE BABE DOLL FOR ELIZABETH!
IT'S SO UGLY... AND YET SO APPEALING. CUTE, EVEN. I THINK I COULD LOVE THIS DOLL.
GOOD GRIEF! I THINK I'M BONDING!!!

Rationale for Series B Objectives

This second series begins to require the student's active participation, as opposed to the first series which was really acclimating the student to the presence and touch of others.

The positions, nurturing, touching and staff awareness of the student's communicative intent is the same as in the first series. In fact when the students are in this phase of reaching out toward an adult in any way, I hope that staff has already acclimated itself to respecting and responding to the student's communicative attempts throughout the whole day.

Loving touch and gentle stroke massage is used in this section. The one on one interaction and the opportunity to concentrate on the student for a period of time makes massage a "natural" tool to illicit attempts to communicate. It also allows staff to realize (because they see and hear the students during and after massage) that our students do have memory of things past and that the student can, indeed, communicate these memories and emotions. It is easy to see the students act out and cry out anger, sadness, sorrow, peace, etc. SEE massage section and the bibliography for additional information and resources.

I have also incorporated the first component of the Van Dijk communication program. It was developed especially for people with dual sensory handicaps. The Van Dijk program emphasizes the development of a cooperative relationship between the student's behavior and that of the instructor. A relationship which is based on the utilization of those motoric behaviors which are already part of the student's repertoire. It proceeds from gross to fine body movements, from cyclic to punctuated movements, from physical to symbolic guidance. The objective is to produce a cooperative motor repertoire between the student and the instructor. See pages 34-35 for additional information on this very specific technique.

"I will not play at tug-a-war.
I'd rather play at hug-a-war.
Where everyone hugs
Instead of tugs,
And rolls on the rug,
Where everyone kisses
And everyone grins,
And everyone cuddles,
And everyone wins". *

(Shel Silverstein,
Where the Sidewalk Ends)

* reprinted with permission

RESOURCES SPECIFIC TO THIS SERIES

1. The First Three Years of Life
   White, Burton
   Prentice-Hall, New York, 1975

2. Educating Severely and Profoundly Handicapped Students
   Sternberg, Les and Adams, Gary L.
   Aspen, Maryland, 1988, 2nd ed.

3. "Prelanguage Communication Programming for the Severely and Profoundly Handicapped".
   Sternberg, L, Battle, C., Hill, J.
   Journal for the Association of the Severely Handicapped
   5 (3) Z: 224-233. Fall, 1980

4. "The First Steps of the Deaf/Blind Child Towards Language".
   J. Van Dijk
   Proceedings of the conference on the deaf/blind.
   Refness, Danmark. Boston: Perkins School for the Blind, 1965

5. "Motor Development In The Education of Deaf/Blind Children".
   J. Van Dijk.
   Proceedings of the conference on the deaf/blind.
   Refness, Danmark. Boston: Perkins School for the Blind, 1965

6. RELATE - Relaxation Techniques and Sensory Experience for the Severely Developmentally Disabled.
   Jan Graetz, et al.
   Wayne County Intermediate School District, 1983

7. Relaxation - A Comprehensive Manual for Adults, Children, and Children with Special Needs.
   Cautela and Gorden
   Research Press, 1978

See bibliography for additional resources

Series B OBJECTIVES

These follow the Series A objectives.

OVER ALL GOAL: The student will demonstrate early communication/interaction skills.

ANNUAL GOAL: The student will exhibit awareness of activity upon himself.

INSTRUCTIONAL OBJECTIVES

1. The student will tolerate close and prolonged physical contact (being held, rocked, massaged, etc.).

   observation

2. The student will relax and change facial expression when wrapped* and held, and rocked.

   within 3 minutes
   observation

3. The student will relax extremities while being massaged or rocked.

   use #2 criteria

4. The student will relax whole body while being massaged or rocked.

   use #2 criteria

5. The student will relax AND change facial expression while being massaged or rocked.

   use # 2 criteria

6. The student will tolerate touch of own body by SELF (assist student to touch his chest, other arm, face, head, etc.).

   use # 2 criteria

7. The student will indicate he is aware of caregiver stopping a rhythmic movement.

face turns toward adult
body moves closer to adult
body begins to replicate movement made by staff member
any of the above within 3 minutes of staff movement.

Van Dijk's movement based communication acquisition work. See Resources for more information.

8. The student will indicate awareness of caregiver imitating his movements.

Student stops movement, looks toward adult
AND then resumes movement.

Van Dijk's work. See Resources.

9. The student will attempt to initiate movement as caregiver approaches.

observation
Van Dijk's work. See Resources.

10. The student will take turns with an adult not involving an object.

observation
Van Dijk's work. See Resources.

11. The student will attempt to act upon/have an effect upon his environment using an object.

observation
and # 7 criteria

---

* Loosely wrapped in a room temperature warmed cotton sheet or blanket.

The procedure for evaluation of the IOs is documented staff observation of student performance. This evaluation of student performance occurs on a regular, ongoing basis throughout the school year.

Stratigies and Techniques for Series A and B Objectives

COMMUNICATION PROGRAM FOR THE SEVERELY IMPAIRED NON-IMITATIVE AND NON VIGILANT STUDENT

OR

"A DUET BETWEEN TWO PEOPLE"

This approach to their training is based on Van Dijk philosophy for the training of severely sensory impaired multihandicapped individuals.

The program moves through various critical stages and at each stage careful attention is given to the sensory demands, intellectual deficits, and behavioral propensities of the population in question.

Objective: To produce a cooperative motor repertoire between student and instructor.

Procedure: The program emphasizes the development of a cooperative relationship between the child's behavior and that of the instructor. A relationship which is based on the utilization of those motoric behaviors which are part of the student's repertoire. It proceeds from gross to fine body movements, from cyclic to punctuated movements, from physical to symbolic guidance. Those behaviors gradually become more complex and less likely to be a pre-existing feature of the child's available repertoire.

The program goes through the following stages:

1. Resonance Phenomenon (entry into child's world)
    a. toleration
    b. participation
    c. indication

2. I Co-active Stage (parallel movements)
    1. gross motor parallel movements with physical contact
    2. parallel movements without physical contact

II Co-Active
- Simultaneous imitation
- Symmetric limb movements
- Asymmetric limb movements
- Symmetric hand movements
- Asymmetric hand movements
- Symmetric limb positions
- Asymmetric limb positions
- Asymmetric hand positions
- Asymmetric finger positions

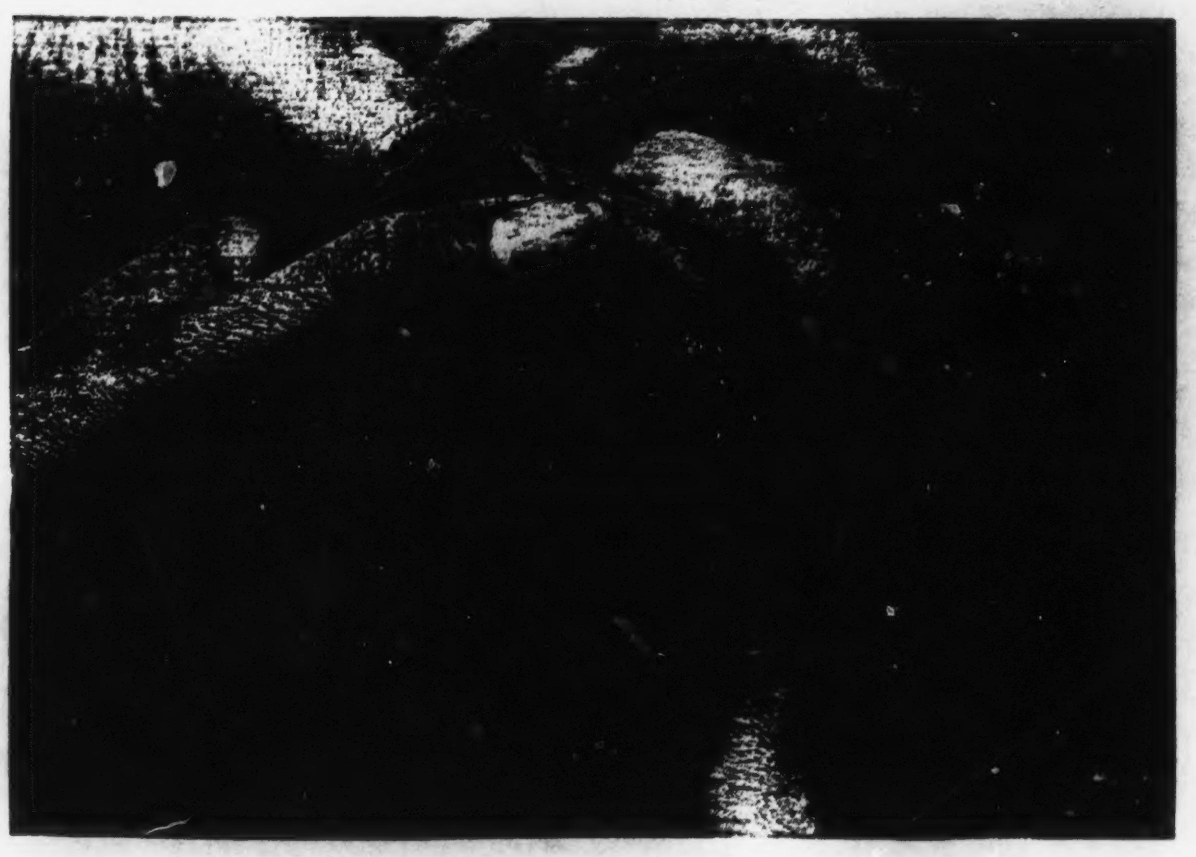
III. Non-Representational Imitation
Imitation which proceeds from 3 dimensional objects to drawing.

IV. Delayed Imitation
From 0 second delays to 5 second delays involving the 8 or more movements.

Conclusion:

Data as to the effect of such a program has been gathered and evaluated over a 6 year period. As a result of this approach severely impaired students have developed behaviors which have enabled them to communicate, cooperate, and participate in activities without guidance and continuous prompts from the staff involved in their training.

(Handout from Kevin Magin's presentation 4/84)



Ludo Willems

MASSAGE *

MASSAGE AND EDUCATION-PEOPLE WITH SEVERE HANDICAPS

In working with people with severe handicaps we need to realize that we have to support in a way that provides **strength, nurturance** and **vision** when Society does not yet even include them as truly valid and valued people. Through massage we can communicate a sense of caring, trust and love beyond what society seems to say. This is so important when relating to people whose strengths are in physical and spiritual qualities.

This proposes a great responsibility on us as educators. It raises the questions of dependence vs independence, and control vs listening to the needs of people with severe handicaps. The responsibility becomes the dilemma of our lives and the future of theirs.

Massage can act as a tool to enhance relaxation, self respect, self identification, reduce self abuse and aggression, healthful enhance conditions of the body and establish a sense of trust in interaction. Massage is a preventative health technique that embraces the emotional, physical, spiritual and chemical well being and balance of an individual.

I. Where to start - What to look for.

A. Always ask permission to do the work.
This process can be done on a verbal level but sometimes you need to go beyond that level and take the risk of touching that student so they can begin to understand what kind of exchange we are asking them to be involved in.

B. Be aware and sensitive enough to accept the student's answer and provide other options along with massage when so needed.

C. Tell them everything you are going to do.

D. Be as gentle as possible.

E. Soften your hands.

F. Let them know and demonstrate that you can be trusted.

G. It is best to introduce massage in a quiet atmosphere. Once you are comfortable with the holding, positioning and massage, you may want to try a variation of the massage by doing it in rhythm with music.

II. Strategies And Techniques

The following list is designed for the massage mentioned in the Series B goals. In no way does this qualify anyone to be more than a person who wants to show nurturing, kindness and acceptance to our students who are still struggling with the decision to come out of their shell, and out of that internal world.

The following are items to think about and to help you as you begin the nurturing portion of the curriculum:

1. Be centered and comfortable with massage yourself. Put out all the warmth, love and care through your hands. The experience of massage can be enjoyable and beneficial to you and the atmosphere of the class.
2. Your hands should be warm and the student should be warm. Room temperature should be at least 70 degrees. No one relaxes when they are cold.
3. Keep your nails short to avoid scratching.
4. Staff should be in comfortable clothes that allow freedom of movement.
5. Keep your hands relaxed as you massage. This may sound strange, but think about it.
6. The students should be in a comfortable position be breathing freely. Imitation of breathing rhythm along with the students works great!
7. Never massage just after a meal. The student's body is busy digesting and cannot fully relax. Wait at least 20 minutes.
8. The staff must wash hands before and after the session.
9. Oils tend to be greasy. Wear washable clothing. Try sunflower, clear sesame or almond oil. You might want to experiment by putting in some of the more fragrant oils. 2 or 3 drops of peppermint (clears the sinus and stimulates breathing), 3 tsp. of comfrey (good for the skin). Experiment with various oils to find specific student preference. Always pour oil first into your own hands being careful not to spill any oil on the student by holding your hands away from their body while pouring. Warm oil by rubbing your oiled hands briskly together.
10. Feet and hands are the most effective places for a brief massage. Neck, face, arms and legs, in that order if you have more time. **PLEASE NOTE: DO NOT DO ANY OTHER MASSAGE EXCEPT HANDS AND FEET IF EITHER ANEURYSMS AND/OR PHLEBITIS ARE NOTED IN THE STUDENTS FILE.**

11. Do a series of strokes in both directions. The point of massage is to stimulate or relax areas so that the body can use its natural healing abilities. Put more pressure on the up stroke and glide on the downward stroke. For students that are hypontonic use more upward strokes, hypertonic use more down strokes.

12. All movements should be done rhythmically, this will take practice. THINK RHYTHM AND SMOOTH STROKES. Remember, you're massaging muscles not just skin.

13. Once you have made contact with the student's body, try always to maintain contact. Always have one hand or forearm (if you are using both hands for something) touching the student until massage is completed.

14. Avoid using heavy pressure, rapid movements, or jarring contact. This only conveys fear of potential injury to the student.

15. Massage should always be applied according to the tolerance of that individual human being. If needed just hold the extremity awhile before beginning. Introduce massage with application of pressure gauged to the individual. Gradually add pressure or diminish pressure (to light touch) as appropriate to the individual. Be sensitive to the individual student's responses. Give the student time to become accustomed to your touch. Start slowly, perhaps by just holding your hands on the student for a minute or so before beginning massage. Keep up a steady rhythm as you massage, but don't hesitate to slow or even stop and just touch if the student's response warrants it.

16. Care should be taken to support the extremities and joints comfortably. DO NOT FORCE! Start slowly.

17. Try not to force massage if the student pulls away. Give them a short respite period, then try to redirect back to massage activity. Let them make the decision. Use touch relaxation which is a slow rocking back and forth.

18. Except in cases of constrictures of muscles around curvatures in the spine, all muscles should be relaxed when you are working with them. You are going to have to work at relaxing muscles that are already tense or contracted. Tips: Read number 15 again, and consult a Physical Therapist or Myomassologist.

19. DO NOT push directly down on gastro or nasal tubes, shunts or trachs. You can massage in the muscles around the trach. The same applies to stomach muscles and gastro tubes. Consult a Physical Therapist or Myomassologist for specific technique.

20. Do not put pressure directly on the bone. Stay in the muscular parts of the body.

21. Feel for knotty tissue or swollen areas. Be sensitive and concentrate in those areas by:
    - holding first - 2 sessions
    - light strokes - combination, 2 sessions
    - heavier strokes - 7th or 8th session

During all of this, talk to the student regarding the massage. Is it too hard, does something hurt, we can work through this, do you want me to continue?, etc.

22. Allow the student to just rest quietly for a few minutes after completion of massage. Note behaviors and facial expressions. Offer a drink of fruit juice or water after the massage.

* Ann and Katy have both worked with students labeled severely handicapped who have needed assistance in attempting to communicate clearly. I thank them for sharing their work with me.

* This section was written by Ann Perrault, Myomassologist, (1987) and Katy Palmer (1983) WCISD. Ann revised both documents in 1988. Reprinted with permission.

> Being touched and caressed,
> Being massaged,
> is food for the infant.
> Food as necessary
> as minerals, vitamins, and
> proteins.
>
> Deprived of this food,
> the name of which is love,
> babies would rather die.
> And they often do.
>
> Loving Hands, by Frederick Leboyer
> 1976, (Alfred A. Knopf, New York) p. 14.

BIBLIOGRAPHY AND SUGGESTED READING - MASSAGE

1. "The Science and Practice of Myomassology"
    Irene Gauthier
    Published by Anthony Joseph Romano
    Southfield Mi. (1989)

2. "The Complete Guide to Foot Reflexology"
    Devin and Barbara Kunz
    Prentice Hall, Inc.,
    Englewood Cliffs, N.J. (1982)

3. "The Use of Massage Therapy in the Treatment of Self- Injurious Behavior"
    Chris McEvoy, Jan Graetz, Ann Perrault
    Wayne County Intermediate School District
    Wayne, Mi. (1987)

4. "Baby Massage"
    Christine Sutherland
    WACS Production
    Toronto, Ontario, Canada (1987)

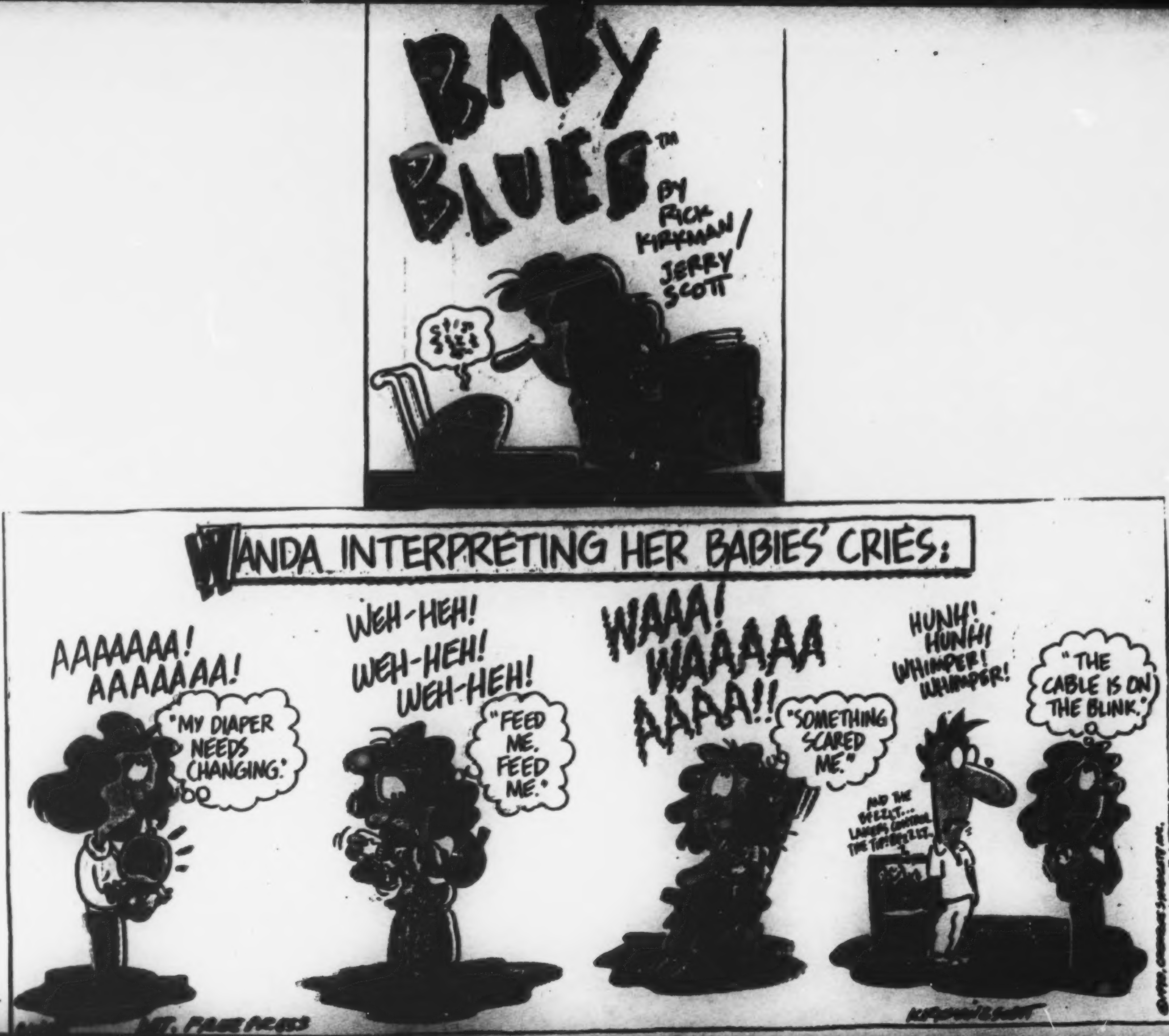
5. "Healing Massage Techniques"
    F. M. Tappan
    Reston Publishing Co., Inc.
    Reston, Va. (1980)

6. "Touch for Health"
    J. F. Thie
    Devores and Co.
    Marina Del Rey, Ca. (1973)

7. "Cranial-Sacral Therapy"
    J.E. Upledger and John D. Vredevoogd, M.S. A.
    Eastland Press
    Seattle WA. (1983)

8. "The Many Facets of Touch"
    Bernard Brown, Brazelton
    Johnson and Johnson Publishing Co.
    Skillman, N.J. (1984)

9. Music:
    a. "Ancient Echos", Steven Halpern
    b. "Comfort Zones",Steven Halpern
    c. "December", "Spring",George Winston
    d. "Pachelbel", Karen and Gisiel Musici
    e. "Echos of a Waterfall", Susan Drake


BABY BLUES™
BY RICK KIRKMAN / JERRY SCOTT
WANDA INTERPRETING HER BABIES' CRIES:
AAAAAAA! AAAAAAA!
"MY DIAPER NEEDS CHANGING."
WEH-HEH! WEH-HEH! WEH-HEH!
"FEED ME. FEED ME."
WAAA! WAAAAA AAAA!!
"SOMETHING SCARED ME."
HUNH! HUNH! WHIMPER! WHIMPER!
AND THE BFZZZT... LAKERS CONTROL THE TIP! BFZZZT...
"THE CABLE IS ON THE BLINK."
KIRKMAN & SCOTT
©1990, Cowles Syndicate, Inc.
[illegible] T. FREE PRESS

RATIONALE FOR SERIES C OBJECTIVES

This purpose of these goals is to establish that the students do have preferences and use their senses. Documentation, on the Communicative Intent Logs, should be kept on specific likes or dislikes.

These goals need only be done until documentation indicates that the student communicates likes, dislikes and awarenesses.

The very fact that staff can agree on a student's likes and dislikes is a clear example of the student's effective communication. The student is sending out a signal **AND** staff are receiving the signal **AND** understanding what that signal means **AND** respecting the student's decision.

The olfactory nerves evolved BEFORE the brain. They are the only neurons and pathways NOT protected by a sheath. Consequently, these nerves have a DIRECT pathway to the brain.

Aromas for relaxation, alertness and cessation of pain are:
lavender - reduced headaches
eucalyptus - alertness
mint - alertness
spiced apple - lowers blood pressure

A fragrance is pleasant and relaxing to the student if you notice deeper and slower breaths and the student seems less distractible.

RESOURCES - SPECIFIC TO THIS SERIES

1. "Scentimental Journeys"
   Pamela Weintraub
   Omni Magazine April, 1986, Vol. 8 #7

2. "Aroma Therapy"
   Eric Mishara
   Omni Magazine Sept., 1986, Vol. 8 #12

3. "The Intimate Sense of Smell"
   National Geographic, Sept., 1986 and follow up article, Sept., 1987

4. "The Power of Holistic Aromatherapy"
   Christine Stead

5. "The Sweet Science of Smell"
   Robert Brody
   American Health May, 1986 pgs. 55-59

See Bibliography for additional resources.

Series C Objectives

OVER ALL GOAL: The student will demonstrate early communication / interaction skills.

ANNUAL GOAL: The student will demonstrate responses to sensory stimulation by consistent gesture and/or vocalization.

INSTRUCTIONAL GOALS:

1. The student will startle to loud/sudden noises, sudden bright light (flash bulbs, opening of drapes or shades, etc.) any touch.

   observation

2. The student will exhibit olfactory awareness of different smells (coffee, lemon, colognes, peppermint, oregano, garlic, perfume, pepper, vanilla, ammonia, incenses, etc.)

   head turns
   changes in facial expression
   whole body movement
   extremity movement

   any or all of these reactions should occur within 10 seconds of cue

3. The student will exhibit awareness of different tactile sensations (velour, sandpaper, cotton, wool, "fur", massage on extremities, dripping water, terry cloth, etc.).

   Use #2 criteria

4. The student will exhibit touch preference (hugs, gentle massage, being held in staff's lap, sitting next to staff, etc.).

   observation

5. The student will exhibit awareness of different tastes (lemon, salt, sugar, "kool-aid", orange, horse-radish, taco sauce, mustard, vanilla, etc.).

   Use #2 criteria

6. The student will exhibit awareness of environmental change (inside-outside, classroom-hall, car-bus, wheeled about-carried, classroom-crowded lunch room, etc.).

   Use #2 criteria

7. The student will exhibit auditory awareness (male-female voices, soft-loud tones, bell, radio (change volume), chimes, hand clapping, table pounding etc.).

   Use #2 criteria

8. The student will localize to source of sound (up, down, right, left).

   observation

9. The student will exhibit awareness of changes in his visual field (lights of differing intensity, pen flashlight, candle, light bulb, Christmas colored lights, blinking small white lights, classroom darkened or lit OR people OR colors OR movement by people or objects).

   observation

10. The student will locate brightly colored object (right, left, above, at waist level).

    observation

The procedure for evaluation of the IOs is documented staff observation of student performance. This evaluation of student performance occurs on a regular, ongoing basis throughout the school year.

MARMADUKE By Anderson

"They communicate quite well...that means he wants a drink of water."

DFP

Examples of Body Language Communication

Dr. Edward Trionick lists some facial, body and vocal signals that make up non-verbal messages. Here are some examples:

Eyes, dull - Needs to take a break. Could be tired or overstimulated.

Eyes, bright and glazing - tuned in and alert

Lips, tense and pulled back - fearful

Back, arching - Distressed. It may be something inside him like a cramp or it may be too much stimulation.

Feet, kicking - Alert and aroused, though he may be happy or angry.

Hands, clenching - Feeling tense. When combined with pounding his hand or an object against a surface, a clenched fist could show baby is really excited.

Hands, palms up - Asking for something

Tongue, in and out - Could mean baby's not happy and feeling some stress.

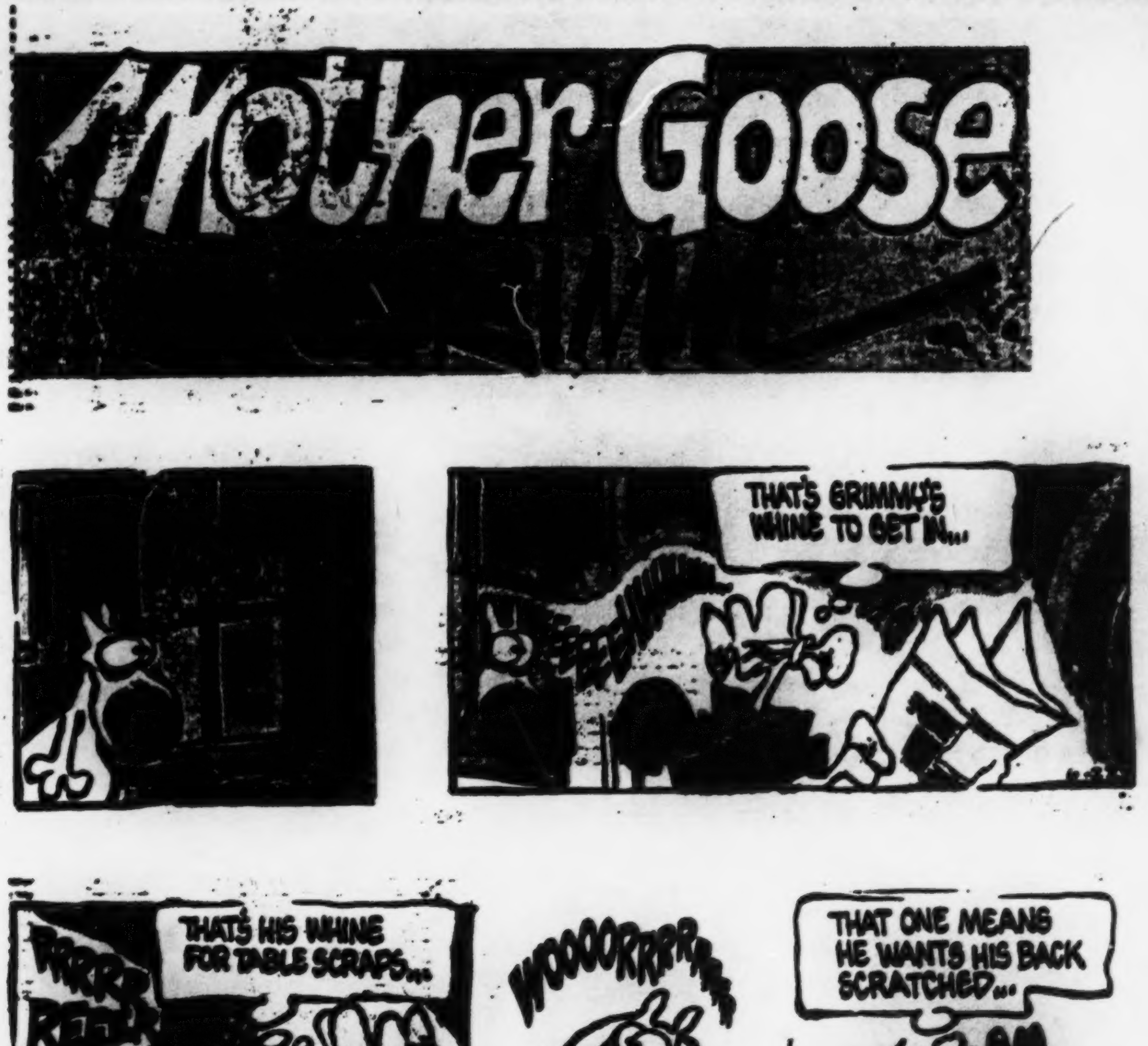
Coo - Happy and comfortable

Whimper - Sad

Read this and think about your students. How do they convey these messages?

Babies are born with at least five basic messages about their needs, wants and feelings. They tell us what they want, when they're having trouble doing something, when they need "time out", when they're giving up or when they're succeeding through combinations of sounds, facial expressions and body movements.

If babies are not fed right away, they may suck on their hand to control their breathing and calm themselves down until they are fed.


Mother Goose
THAT'S GRIMMY'S WHINE TO GET IN...
THAT'S HIS WHINE FOR TABLE SCRAPS...
WOOOOORRRRR
THAT ONE MEANS HE WANTS HIS BACK SCRATCHED...
AND THAT WHINE MEANS HE WANTS OUT.
DOG OWNERS ARE GREAT WHINE CONNOISSEURS.

1986 DET. FREE PRESS PRINTED IN CANADA

COMMUNICATIVE INTENT LOG
PERSONAL DICTIONARY

Student: ____________________

Birthdate: ____________________

DATE AND INTENT IDENTIFIERS	COMMUNICATIVE INTENT BEHAVIORS EXHIBITED "This is what I do."	INTENT MEANS "This is what I am trying to tell you."
Lee 5/87	1. right hand touches/sweeps thigh	1. Diaper is dirty
Lee 5/87	2. turns head away facial expression of dislike lots of body movement	2. does NOT like catsup, carrots, cooked tomatoes
Lee	3. relaxes and calms when feet are gently massaged.	3. enjoys the touch by familiar adults
	4. vocalizes - higher pitch eye gazes at adult when adult stands near (within 3 feet) but does not interact with student	4. wants interaction
	5. smiles and eye gazes at adult when his arm activates the VOCA and it says "Come here, I need a hug."	5. wants a hug

Collecting Information For The Log

1. Items listed have been agreed upon by classroom staff as consistent.
2. Support staff and parents review and add items.
3. Should be up-dated twice a year.

Copies Of The Log

1. Should be kept with the current IEP. This helps to insure carry-over to the next classroom.
2. Should be given to the parents. They, in turn, can give copies to the student's various therapists, doctors, baby sitters, siblings, etc. These other people can then more readily understand and communicate more comfortably with the student.
3. Video taping of the behaviors is strongly recommended. Parents love watching their children. Hopefully, the log will record the development of communication by more and more sophisticated means.
4. The log is no longer kept once the student "graduates" to a traditional augmentative communication system (signing, VOCA, communication board, etc.)
5. Should be prominently displayed in the classroom. We want everyone to understand the communication systems.

"Everyone Communicates!" (1987) Heler - WCISD

COMMUNICATIVE INTENT LOG
PERSONAL DICTIONARY

Student: ______________________________

Birthdate: ____________________________

DATE AND INTENT IDENTIFIERS	COMMUNICATIVE INTENT BEHAVIORS EXHIBITED "This is what I do."	INTENT MEANS "This is what I am trying to tell you."

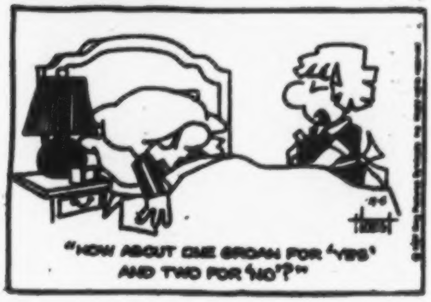
"Everyone Communicates!" (1987) Heler - WCISD

RATIONALE FOR SERIES D OBJECTIVES

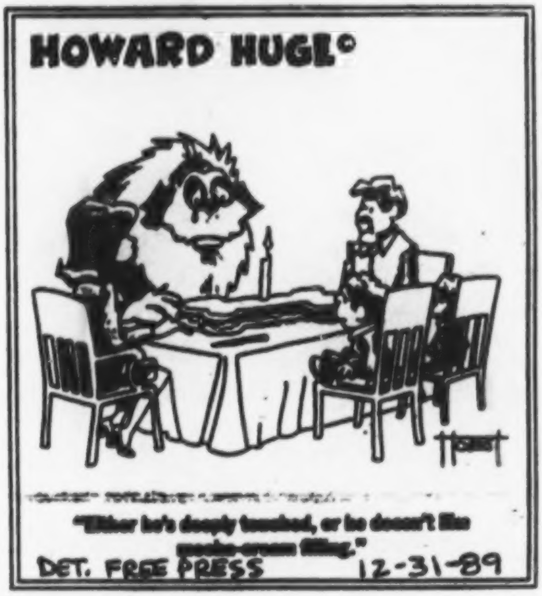
These vocal behaviors have gotten the most attention by language acquisition researchers. This is the series that is traditionally thought of when discussing a capacity for communication.

Although there is so much in current research on vocalization, I am concerned that educators will forget to remember that the trust/bonding/security issues and communicative intents by body gestures are also a part of the student's repertoire of communication attempts.

Lockhorns



"HOW ABOUT ONE GROAN FOR 'YES' AND TWO FOR 'NO'?"



HOWARD HUGE©

"Either he's deeply touched, or he doesn't like [illegible] filling."

DET. FREE PRESS 12-31-89

RESOURCES - SPECIFIC TO THIS SERIES

1. "The Acquisition of Performatives Prior to Speech"
   Elizabeth Bates, Luigia Camainoni, Virginia Volterra
   Merrill-Palmer Quarterly, 1975. Vol. 21, #3, 205-226

2. The Piagetian Language Nursery - An Intensive Group Language Intervention Program for Preschoolers
   Elizabeth and Andrew Johnston
   Aspen Publishing Co., MD. 1984

3. "Baby Talk"
   Bruce Lansky
   Meadowbrook, 1983 - $4.95

See Bibliography for further resources.

Series D Objectives

OVER ALL GOAL: The student will demonstrate early communication / interaction skills.

ANNUAL GOAL: The student will use vocalization/augmentative communication in attempts to communicate.

INSTRUCTIONAL GOALS:

1. The student will employ differentiated (varied tone, pitch, intensity) cries for different wants and needs (hunger, wet, dirty diaper, pleasure, pain, discomfort, happiness, etc.).

   observation
   audio tapes
   5 consecutive times

2. The student will "coo" (vocalization in lower tones, often in sentence rhythm. Student appears relaxed).

   Use #1 criteria

3. The student will initiate social approach vocally.

   observation

4. The student will laugh appropriately (staff interacting in a playful way, tickling, joining in on staff laughter, etc.).

   observation

5. The student will act upon an object to move/make noise/comfort by random movement.

   observation
   5 consecutive times

6. The student will act upon a Voice Output Communication Aid (VOCA) by random movement.

   See rationale for VOCAs, pgs. 52-53
   See techniques for VOCA use, p. 54.
   Use #5 criteria

7. The student will act upon an object to move/make noise/comfort deliberately.

   repeats action
   observation
   5 consecutive times

8. The student will act upon a VOCA deliberately.

   Use #5 criteria

9. The student will combine gestures and vocalizations for attention.

   observation

10. The student will change pitch and tone of vocalizations to clearly indicate specific wants or needs.

    Use #5 criteria

11. The student will increase frequency of vocalizations

    observation
    audio tape

12. The student will babble (sounds easily labeled, sentence, length, often appears to be practicing a sound).

    Use #5 criteria

The procedure for evaluation of the IOs is documented staff observation of student performance. This evaluation of student performance occurs on a regular, ongoing basis throughout the school year.

Rationale For Employing Voice Output Communication Aids (VOCAs) At This Level Of Functioning

1. Most of these students are not going to develop understandable speech. Consequently, they are going to be dependent upon an augmentative/alternative form of communication. Introducing a VOCA early in their education program begins to habituate the caregivers and staff to an alternative form of "voiced communication" for that student.

2. Assuming communicative intent is essential in developing expressive communication skills, and in fact, any skills in these students. This is just another way to act upon assumed intent. (Gravity or the accidental touch activating the device is assumed to have meaning).

3. Communicative intent and interaction modeling is recognized as a valid part of expressive communication training. By instituting the VOCA training, using a device and keeping data on the number of activations by the student, the classroom is emphasizing the expressive communication portion of that student's program. The device and it's use is one more strategy to emphasize the importance of this programming area.

4. Voice output helps guarantee a quickness of response by the caregiver. The device gives a voice to our students. People with understandable speech respond to an other voice more quickly than to any other attention getting act.

5. The over-lays or menus pages are a good monitor of the changes in the student. As the student becomes more definite in his likes and dislikes, develops preferences for interchange, etc. so the over-lays change to reflect the newest "like". This then serves as one more piece of evidence, one more indication that learning is happening.

6. The additional piece of equipment need not be expensive. (ADAMLAB products are all between $300.00 and $400.00) Given the intense importance of this area of programming, the cost is negligible.

7. The device can be called language prostheses, meaning it's use facilitates the student's immediate participation in oral language interaction.

8. The devices allows the students to participate in dialogues, in communication interactions. This is absolutely essential because this is the way people learn to communicate more clearly and efficiently, talking to someone, someone talking back to them and the conversation building from there.

9. The degree of physical handicap often makes voice output and the adaptive aids the only way a student can communicate more than the very basic needs and wants. Body movement, facial gesture, etc. are helpful at that very basic level but in order to ever get beyond that, these devices and their handicap adaptations are often the only way out.

10. VOCAs eliminate some of the one on one work. Although, undeniably, the physically impaired need one on one for any number of things, the VOCAs eliminate it in some areas (academic programming, announcing a need or want, participating in routine daily interchanges). They allow small group and class participation.

11. The students are safer with a VOCA they can use at all times. They now have a means to yell "help" or "no" or call for assistance.

12. The VOCAs allow some level of privacy because the student can be left alone (in another room) and the caretaker knows that if something were to happen, the student has a way to request help.

13. One of the most important reasons for a VOCA is because people with understandable speech only like to talk to other people with understandable speech. They don't wait patiently or go out of their way to talk to someone who uses any other alternative. Our students have a right to this technology.

14. For education, for leisure time programming, for functional "in family" use, the VOCA cannot be beat. Some devices have memory functions, environmental controls, and print out capabilities that their use becomes much more than a voice. Given that there is only so much that people can carry around, in addition to the student, VOCAs become that priority.

15. The students also look more intelligent. When people see a computer or a piece of "high tech" accompanying a student, they begin to think differently about that student. Often this first impression eliminates the need for our student to "prove" himself. People assume his intelligence.

In all cases, staff comes to regard the student much more positively. I make this judgement call based on the language used around the student before and after instituting VOCA use. Staff's questions about the device and the student and the potential use of the device is heard more often than the endless talk about the number of things that the students cannot do. In the case of the students who are dependent for all care, this alone to me justifies the use of a device. The better the attitude of the care-giver, the better care the student receives.

TO USE A VOCA

1. Place the touch sensitive or single switch VOCA in a position where it can be activated by gravity, random or accidental touch.

2. The request on the VOCA will be pre-determined by staff who have found items of pleasure enjoyed by the particular student. For instance, the overlay would say "give me a hug" because staff had found previously that this student really enjoyed this close interaction. For another student this might not be his "nurture preference" and so his overlay would say something else. See WOLF menus pages 79-85.

3. When the VOCA is activated, staff responds IMMEDIATELY. Communicative interaction and expressive communication power and control are sophisticated concepts. Immediate response helps the student to establish the connection between the VOCA and himself, to recognize that this combination has the power to cause adults to act in the way he has requested.

4. I recommend that this part of the expressive communication program be instituted for specific time periods initially. The "quickness of response" habit and positioning the student and the VOCA into ideal positions takes some time to integrate gracefully into a classroom routine.

5. All of these over lays are on separate levels. When using the VOCA in this fashion, the skill training is **entirely** focused on internalizing the relationship between device activation and control.

CONTACT ADAMLAB: Jan Jarrell, (313) 467-1610, for information concerning the "Everyone Communicates!" vocabulary and overlays.

PARENT'S COMMENTS AND OBSERVATIONS ON THE USE OF AN AUGMENTATIVE DEVICE WITH THEIR OWN CHILD

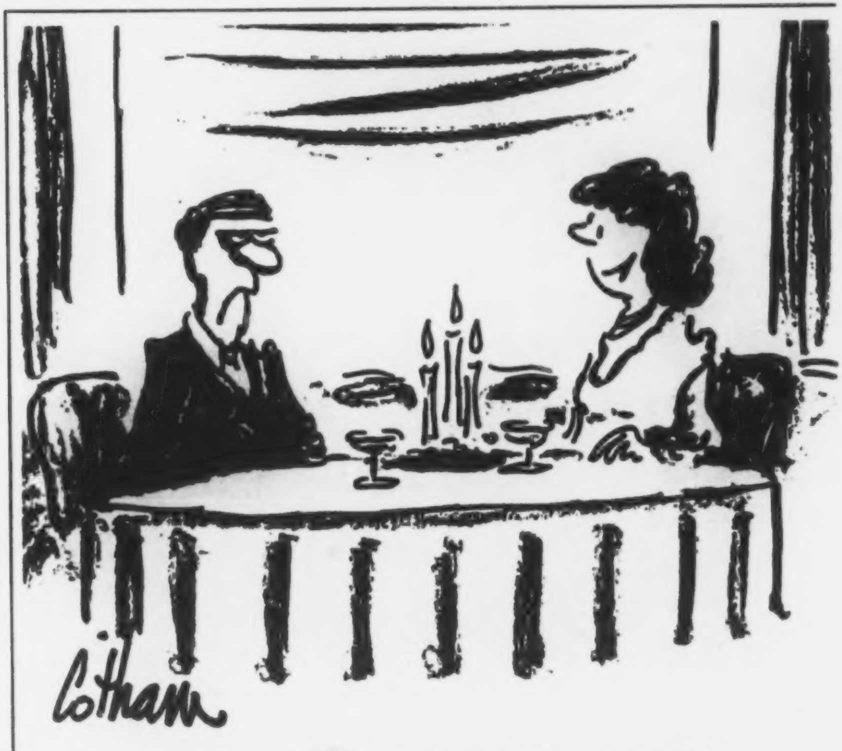
Pros:

1. Having the device lowered frustration level of their child. Made the child easier to deal with.
2. Brought their child closer to age level.
3. Opened up the child's interests to the rest of the family.
4. Change in attitude by peers and siblings. As gotten older, peers, etc. have longer attention span in her and in her device.
5. Older son demonstrated sister's device at school.
6. Felt the communication device brought out respect.
7. Could sit down and talk and chat with the family.
8. Write to friends, sell Girl Scout cookies, etc.

Cons:

1. People don't take the time to wait for responses. Makes the user feel what they had to say is not important.

These statements came from an informal gathering of parents at a TASH Convention.



"I can tell something's wrong, Harold. You know you can't hide your feelings from me."

NEW YORKER

GENERAL STRATEGIES

FACILITATING COMMUNICATION INTERACTION

1. Get into the habit of approaching the students slowly. We want our students to want us in their world and this low approach gives them time to prepare themselves for us.
2. Don't ever rush anything with the students. Go through their skill training slowly, daily care slowly.
3. In group activities, position the students so that staff and students are close enough to have the opportunity to touch one another.
4. Any time you talk to the student, always attempt to engage the student in a conversational turn taking situation. That is, eye contact, acknowledging the student's participation no matter how minimal.
5. Always touch the students with WARM hands.
6. Explain all care and tasks no matter what the functional level of the student is thought to be. You never know for sure what is understood because the student's means of expressive communication is still so tentative and still so apt to be misunderstood. A running commentary is often very effective if you don't know what else to say.
7. Always cover the plastic and vinyl equipment. This is so cold or so sticky and is just uncomfortable to sit or lay on. Sheets are fine.
8. At this level of functioning, do NOT use any negative remarks, phrases, etc. The student is still very tentative about other humans and may not yet even function outside of internal cues. Keep all remarks positive, welcoming and accepting.

KEEP A ROCKIN' AND A ROLLIN' *

THE NEED TO ROCK

Rocking is first experienced in the womb as the fetus is rocked in his amnionic environment. As the mother walks, turns, sits and bends, so does movement occur with the unborn child. Once the child enters the world rocking remains an important means of providing movement and a sense of rhythm for the child.

Rocking is known to increase cardiac output and is helpful to the circulation (Montagu, p. 128). It promotes respiration, discourages lung congestion, and stimulates muscle tone. If a person is too warm, rocking has a cooling effect as air passes over the body; when a child is too cold, rocking warms him by the physical contact involved. It provides a gentle stimulation of almost every skin area.

Years ago, rocking was performed as a matter of routine. An infant was placed in a cradle instead of today's stationary cribs. At the turn of the century child rearing practices changed. The cradle was thought to "indulge" and "spoil" the child. Parents were told to take a more stern approach with infants and treat them like adults. The fixed crib was introduced and much rocking of the infant ceased. (Holt, The Care and Feeding of Children, 1894).

Children and adults, handicapped and non handicapped, "rock" their bodies for several reasons:

1. transient rocking as a normal reaction to frustration,
2. rocking as an auto erotic activity in children who have suffered some degree of maternal behavior,
3. rocking as a withdrawal of attention and extreme preoccupation in children suffering from infantile psychoses,
4. rocking which serves the purpose of discharging of self-stimulation.

ROCKING ACTIVITIES FOR THE SMI/SXI CHILD

Rocking can take place in a variety of ways:

1. If the child is small enough to hold, take the child in your arms and rock in a traditional rocking chair. The child can be held (a) up at your shoulder (b) across your arms (c) chest down, across your lap (d) back down, across the top of your legs, facing you.

2. If your child is too big to hold in your lap, sit with him on the floor with his back to you. Embrace the child and begin rocking your body side to side, or front to back. Later, add an instructor and child next to you, forming a human, rocking chain.

3. Swaddling refers to tightly wrapping the child in a blanket or sheet and incorporating rocking. Comfortably wrapping a child offers a further sense of security if the child is resistant.

4. Any child can be placed on a vestibular mat and rocked in either direction. Unfortunately this type of rocking does not offer close physical contact. Because of this to compensate, while the child is being rocked, gently stroke the body. For some children a developmental ball may be used.

5. Do not pick up and rock a child only when he is crying or fussing. Try to reach him before he cries. Rocking frequently forestalls crying if supplied in time.

6. If possible, rock two children at the same time thus allowing them to experience yet another person.

7. Rock to the rhythm of quiet, relaxing music. Tapes of melodic tones have a soothing effect on children and adults.

8. Children with eating and/or drinking problems, respond well to being rocked slowly just before meal times. The relaxation results in less gagging and coughing.

Ideas compiled by Jan Graetz,
Relaxation/Nurturing Program WCISD, 1985
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AN AUDIO CASSETTE OF MUSICAL SELECTIONS

This cassette tape was prepared for use in classrooms that are in various stages of implementing the cognitive-linguistic program titled: "Everyone Communicates!" by Ann Heler. There are many ways in which individuals convey thoughts and attitudes to one another, and all of us would agree that music, in this case specific lyrical selections, can create a specific mood or tone in our affective being. The songs on this cassette have been selected for two purposes. The first selection of songs was put together to help staff look at their students with acceptance as a viable communicative partner, and provide a stimulus for some physical interactions through touch and co active movement. The second side of the tape puts together a selection of songs form the past twenty years that describes the value of relationships between two people, and hopefully encourages staff to again accept the students they work with and inspire them to creatively communicate with this very diverse group of individuals.

This brief handout will give you an overview of the selections on the tape, a rationale for each song's inclusion, and a few ideas of how you may use it in your classroom or home. Ideally, this cassette will serve as a springboard for your own creativity on how you can use the music that is important to you in your life to build communication bridges with your students.

Side One : Acceptance/Interaction

The first sequence of songs are designed to promote a touching response between the caregiver and client/student. The sequence lasts about 15 minutes and focuses on touching hands.

(1.) **Reach Out and Touch Somebody's Hand: Diana Ross**

Hold out your hand or massage student's hand while singing the song to him.

(2.) **Touch a Hand, Make a Friend: Oakridge Boys**

This song is along the same context as the first, but with a country flair. The song stresses the importance of touching and friendship. Again, staff should touch student's hands while singing the song.

(3.) **I Want to Hold Your Hand: Beatles**

Hold the student's hand for prolonged contact during this selection.

(4.) **Everyday: Oakridge Boys**

This song was selected as a bridge between the touch sequence to the parallel interaction sequence. The song describes smiling and "shaking hands". The staff should sit across from the student and trace an outline of a smile on his face, and shake hands when cued on the song.

The last sequence of songs on this side are called "parallell interaction" selections and last about eighteen minutes. The songs were selected to provide an opportunity for staff to engage in some physical contact with the students in a nonthreatening way to both student and staff.

(5.) **Smile Please: Stevie Wonder**

This song should be sung to the student while both staff and student are looking in a mirror. It builds on the previous song on the importance of smiling. The staff and student should be sitting next to each other. The staff member can place his arm around the student and rock him gently while singing the chorus.

(6.) **Lookin' Like Love to Me: Peabo Bryston and Roberta Flack**

This is another song that should be sung to the student while both individuals are looking into a mirror. It is a wonderful song about taking risks and exploring new relationships, and in many ways can describe a teacher/student relationship as they both get to know each other's abilities and expectations. This is a great song for a slide show. The beauty of a slide show is that it is often a means to communicate perceptions of the students you work with to staff and other community people. Showing picture slides of the individuals in your classroom set to this song can create a new perspective for many people who come into contact with them, and may result in people seeing the individuals in a fresh and more caring way.

(7.) **It Takes Two: Marvin Gaye and Kim Weston**

Communication is two-way, and this song is an upbeat approach to that idea. The student should be placed directly across from the staff. The staff person (face to face with student) holds onto hands/arms and rocks back and forth while singing "it takes two, me and you"!

(8.) **Rock With You: Michael Jackson**

Sit spread eagled on the floor and have the student's back against your chest. Wrap your arms around him and rock to the beat, music and words of this song.

(9.) **Friend on the Floor: Hap Palmer**

Have the student lie on the floor and gently touch and move the parts of his body as they are indicated in the song.

Side Two : Acceptance/Inspiration

These songs have been selected deliberately from the past twenty years to generate good feelings from the staff member's own past.

(1.) **Bridge Over Troubled Water: Simon And Garfunkel**

This song is a beautiful reminder of how special a relationship can be.

(2.) **You've Got A Friend: James Taylor**

While listening to this song, why not get the WOLF VOCA out that when pressed responds "Teacher, please come here". When the song says, "Call out my name..and soon I will be there", have the student press the WOLF and come running over.

(3.) **Beautiful: Carole King**

The song reminds us of the attitude we should carry into our classrooms, and the pay-off that we will recieve.

(4.) **Annie's Song: John Denver**

Although written as a tribute to his wife, the words to this song remind us of the value that each person can bring to a relationship.

(5.) **Just The Way You Are: Billy Joel**

A song about unconditional acceptance of each other, a major prerequisite for the succssful implementation of augmentative and alternative communication stratagies.

(6.) **Happy Together: The Turtles**

As a result of friendship and acceptance, we really can be "Happy Together".

(7.) **When I'm 64: The Beatles**

This is a light hearted song that hopefully will remind staff of our own vulnerabilities and increasing dependence on other people. It was included to generate feelings of empathy for the students we work with.

(8.) **That's What Friends Are For: Dionne and Friends**

We are increasingly becoming a more interdependent educational system, and this song reminds us poignantly of the value of friends in our professional and personal life, and helps us focus on what we do in our profession in a "helping/service" field. It is also another great selection for a slide show.

Prepared by: Mary-Dean Barringer, WCISD, 1987.

* This tape cannot be duplicated due to copyright restrictions. You can certainly put together a tape similar to this for use in your own classroom.

Staff And Parent Training

STAFF TRAINING

The training of staff is so important. What has to be gotten across is two things:

One: They need to look at the students in a new way. They have to begin watching EVERYTHING the students do. Staff has to learn to ask themselves "what is the student trying to tell me by doing this behavior"?

Eventually everyone's observations are going to be shared. The items that are agreed upon will then be added to the Communicative Intent Log (see pgs. 43-44).

Two: that it is OK and indeed necessary, to be within 12" of the students and to touch the students at times other than changing diapers or assisting with skill training tasks. The adults need to put themselves into the positions that will allow the student to "reach out and touch" and then will receive attention in return. One of the critical parts of a program at this level is the ability of the adult to inspire trust and security.

The following list of things have helped staff to understand what the program is trying to accomplish.

1. Explain the objectives of the program.

   Most agree that everyone communicates in some way. The task is to make staff understand that it is the STAFF that has to open up to communicative intent. Two examples: If the student does not like carrots, DO NOT FEED that student carrots. If the student responds to rocking by initiating the motion, find time to do this on a DAILY, consistent basis.

   The goal is to help the student realize that his actions and vocalizations CAN cause adults to act as she wishes. This response of course, encourages more attempts. By these actions on the adult's part and the student's part, we are duplicating the early communication interaction model. We are developing a "communicative intensive environment", an environment that encourages each student to "talk" with us.

   a. DEVELOP A LIST of actions, vocalizations, tension states, etc. that are agreed upon as meaning certain things: certain cry means hunger, certain facial grimace means a food dislike, etc. Obviously, the "certain" items will be spelled out on the Communicative Intent Log. If at all possible, document on videotape.

   b. EXPLAIN and DESCRIBE these communicative intents to everyone who works with the student. If staff is primed to encourage the attempts, the communication interaction desire is strengthened in the student. We then set up a "Catch-22" of attempts by the student being rewarded and encouraged by the staff which makes the student attempt more and more sophisticated interchange which then encourages and inspires staff to be more open and willing to continue "talking and listening" to the students which encourages the students....etc., etc., etc.

c. DOCUMENT by video tape the communicative intent attempts.

2. EXPLAIN RATIONALE for the intimate positioning.

   The positions are adapted from the mother-infant bonding work. We have to break the traditional "teacher-across-the-desk" syndrome. We need to be physically close to our students. Traditional classroom activities do not work with these students, it is time to "try another way".

3. DEMONSTRATE all techniques just as you would for any other skill training protocol.

4. ASK PERMISSION before photographing staff.

5. ROTATE the students on a weekly basis. It is not realistic to allow the student to build an exclusive one on one relationship. There are too many staff changes in a school setting. These students also have to get used to a number of ancillary staff both at school and at their various clinics. It is a very sad truth that these students are often our modern day gypsies. They are moved often and rarely have the stable, life-long intimate "family" that a general education student has.

6. DO NOT RECORD data during the 20 minute sessions. This time is between the student and that staff member.

7. FILL IN the Communicative Intent Log together.

8. Have ADDITIONAL INFORMATION about this work available. Examples of body language are often requested. See the Bibliography.

9. DISCUSS COMFORT LEVEL for staff. Obviously, when staff is getting ready to position the students, they should have enough paper toweling to wipe drool, bolsters for positioning, etc. This is supposed to be a comfortable, relaxing period for both, not an endurance contest.

The Speechless Communicator * Macomb County ISD, Michigan

Spring, 1988, Reprinted With Permission

Augmentative Communication Quiz

Take a minute to test your augmentative communication skills Then check your answers.

1. If a child will eventually be able to use speech to communicate, the youngster should not be started on augmentative communication system. ( ) True ( ) False
2. Providing a child with an augmentative system will cause the youngster to become lax in efforts to produce speech resulting in a regression in speech/language development. ( ) True ( ) False
3. For a child who will be an augmentative system user, it is best to adopt one augmentative system and stick to it. ( ) True ( ) False
4. The best place for communication training is the speech therapy room. ( ) True ( ) False
5. It is important to make a child use an augmentative communication system all of the time. ( ) True ( ) False
6. Behavior problems must be resolved first before we can begin communication intervention. ( ) True ( ) False
7. The speech therapist has no business being involved in behavior management programs. ( ) True ( ) False
8. A child must be able to match a picture to its corresponding object before he can understand its use on a communication board. ( ) True ( ) False
9. Language development is much more important than communication skill intervention. ( ) True ( ) False
10. A child must understand a word-picture association (receptive vocabulary) before the youngster can use the picture on a communication board. ( ) True ( ) False
11. Speaking adults should never use the child's augmentative communication system because that would slow down the development of the child's receptive language skills. ( ) True ( ) False

Quiz Answers are on page 124

PARENT TRAINING

In addition to the STAFF TRAINING suggestions:

1. - invite the parents to school to review the video tapes and the Communicative Intent Logs. There are few parents who can resist seeing their child on tape. As soon as parents understand what you are looking for, they will mention other things: cries that mean one thing, which voices or people can always bring a smile, techniques and holding positions that seem to bring out the child's "cuddles" etc. The recognition of these behaviors as communication by professionals always reassures the parents. The parents know their children and, to have their observations be looked upon as absolutely crucial and important always helps relations between the classroom and home. This is an ideal time to show them additional techniques (the voice output communication device or the Van Dijk work, for example). I am so convinced that the parents have to be part of this process that offering to provide transportation to and from the school is not out of line. At this level of functioning, what happens at home is crucial. The school and parents have to work together.

2. - explain the Communicative Intent Log and ask for their input. This is often easier to explain after they have seen the video tapes.

3. - offer to demonstrate the techniques used for the relaxation portion of the goals or the position needed that seems to elicit activation of the VOCA.

   But be careful. Watch the parents carefully. If they really seem to want to watch, go ahead. If they are hesitant, don't push the issue and offer the video tape first.

   Volunteer to teach them the techniques that the classroom has found successful. Once again, don't push if the parents appear hesitant.

   The reason for backing off and having the video tape ready is that many of the parents have not accepted their child's functioning level OR have experienced the "crushed dream" OR are not anxious to have themselves set up to go through failure. Many parents may also be embarrassed to attempt techniques or positioning in front of the school staff.

4. - keep the training period or sharing information session as comfortable as possible. All of the rules learned to make parent-teacher conferences comfortable also apply here. Parents and the classroom are a team. This is no place for competition, one-up-man-ship or professional elitism.

5. - invite the parents in, one set at a time. This will give you another opportunity to develop the relationship between that family and classroom staff.

6. - use this opportunity also to help parents become more comfortable in their role as advocates for their child. The following list of questions can help insure that expressive communication and their child will be taken seriously.

MY CHILD'S EXPRESSIVE COMMUNICATION PROGRAM

These questions are directed to classroom staff and therapists.

1. Explain what you will be doing over this year to increase my child's expressive communication vocabulary (vocalizations, signs, communication boards, monitoring likes/dislikes, facial/body gestures, experimenting with VOCAs and switches, etc.).
2. Who will do what? (What is the role of the Speech and Language Pathologist, teacher, classroom staff?)
3. What can **WE** do to help our child develop his/her expressive communication system?
4. When can we get together for specific training and discussion?
5. Explain exactly how you want us to use the system at home and in the community
6. What do you need to know about our home routine?
7. Where is the communication system my child uses, explained and described in school reports?
8. What do you need to know about our child's daily routine?
9. Is my child encouraged to use his means of communication throughout the whole school day?
10. What do you see as my child's current functioning system?
11. When can we talk about my child's present system, the "ideal" system for my child or the system I prefer?
12. Do you video tape my child's responses if the responses are not by a traditional system (board, accepted sign, VOCA, speech) so others can become acquainted with the system my child uses?
13. Where can I get more information on communication by means other than speech?

Remember!! "Everyone Communicates!"

Appendix

"Everyone Communicates!": Suggested WOLF Vocabulary Overlays

The purpose for the prepared pages is convenience. We have tried to put together a packet of "most frequent" communication initations. Remember that the user portion of the Wolf is still available for student specific and classroom specific use.

This overlay collection and lesson plan illustrate how the request to use natural gesture and vocalizations and/or any alternative communication system at least 15 times a day per student is easily done.

The pages are in three sets:

1st Set: Overlays 1-13.
These are examples of pages that follow "Everyone Communicates!" objectives. These are probably going to be activated by random touch initially.

2nd Set: Overlays 1-6, 14-21, 30-33.

The se pages should be available in every classroom. These pages can be used for individual affirmations and room routine.

3rd Set: Overlays 14-30.

These pages can be used in group activities and for specific event programming.

Naturally, these pages are only examples. Of course there will be pages that you design specific to your students and your classroom. Every student has his own style and personality. That should be reflected in your WOLF programming.

Model "routine" lesson plan for "Everyone Communicates!"[1]

Time	Planned Activity	Staff Communication Initation	Wolf Overlays[2]
8:45-9:00	Greetings	"Hi! Glad you came to school today!"	Overlay 31
9:00-9:20	Toileting	"Do you need to be changed?" "Do you need to go to the toilet?"	Overlay 30
9:20-10:00	Therapy Positioning	"I'm going to put you into a position. I will leave Wolf here. You call if you need something."	Put one of the pages indicating specific likes.
10:00-10:30	Skill Training	"Ready for work?"	Overlay 30
10:30-10:45	Snack Time	"We need a break!! Want to eat? Want something to drink?"	Overlay 30, 12, 13
10:45-11:15	Self awareness Relaxation	"Let's take a minute and talk about you."	Overlays 1-7
11:15-12:30	Lunch	"Are you hungry? Are you thirsty? Do you want more?"	Overlays 12, 13, 30, 33
12:30-1:00	Toileting	See above.	Overlay 30
1:00-1:45	Skill Training	See Above.	Overlay 30
1:45-2:30	Small group games Peer Interaction[3]	"Lets play a game! Do you want to win a prize? Is it your turn?"	Overlays 22-27
2:30-2:50	Preperation for Departure	"Do you want to go home? Do you need toileting? Did you wear a coat today? Goodbye!"	Overlays 30, 32

---

1. No special activities or visitors, just a plain day. Anything special of course, gives just so many more opportunities for communication interaction.

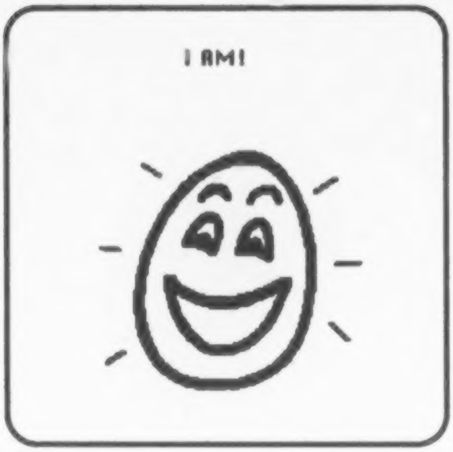
2. If the vocalization or natural gesture is clear, use it rather than an augmentative system. Be sure to have each student's consistant gestures and vocalizations described on a Communicative Intent Log.

3. Sets one and two are used here for all of the interaction required during group activities. You would also use set three for specific games, holidays, etc.

"Everyone Communicates!" Overlays and Vocabulary

Available through ADAMLAB. Call (313) 467-1610

Page 1



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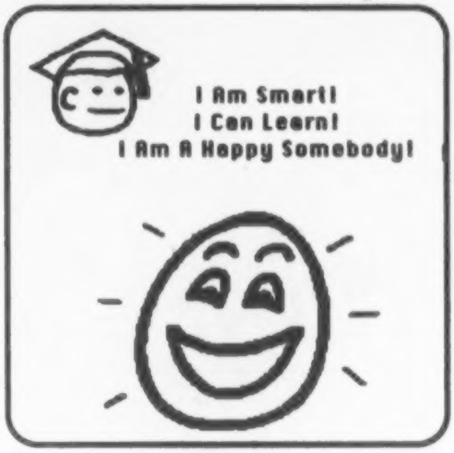
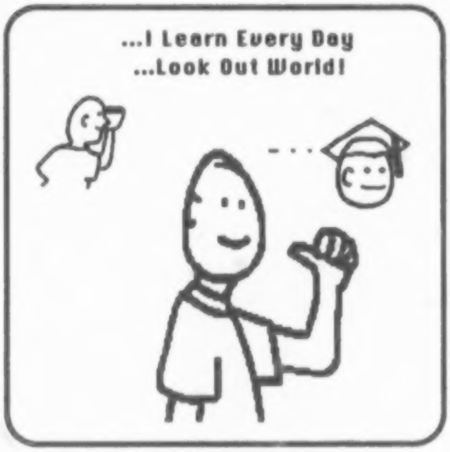
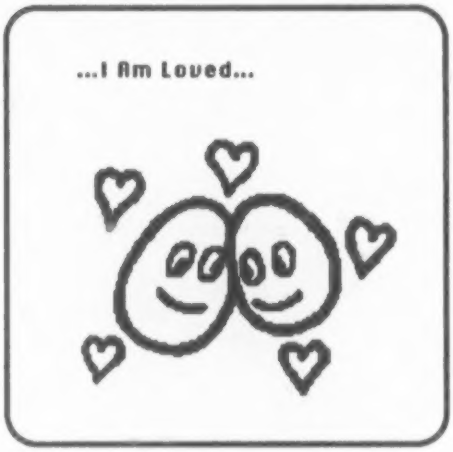

I Am Smart!
I Can Learn!
I Am A Happy Somebody!

Page 3


...I Learn Every Day
...Look Out World!

Page 4



I am Smart!
I am In School!
I am Alive and Well!
Look Out World! *

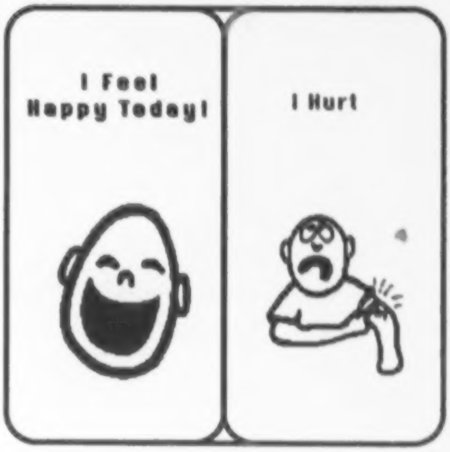
I am Whole!
I am Loved!
I Look Inside Myself
and Like What I See!
I AM! *

* Although the overlays are printed as shown, the Wolf is programmed with this whole caption.

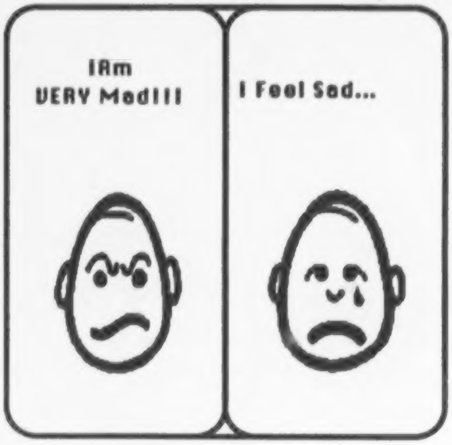
"Everyone Communicates!" Overlays and Vocabulary

Available through ADAMLAB. Call (313) 467-1610

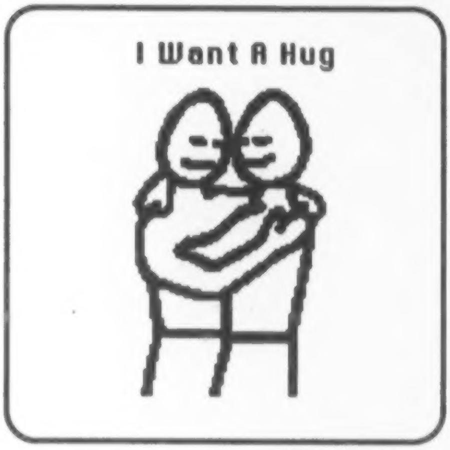
Page 5


I Feel Happy Today!
I Hurt

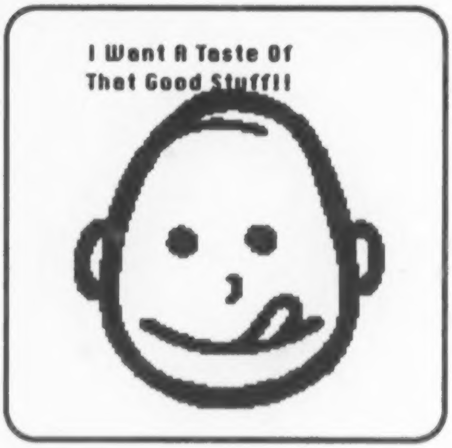
Page 6


I Am VERY Mad!!!
I Feel Sad...

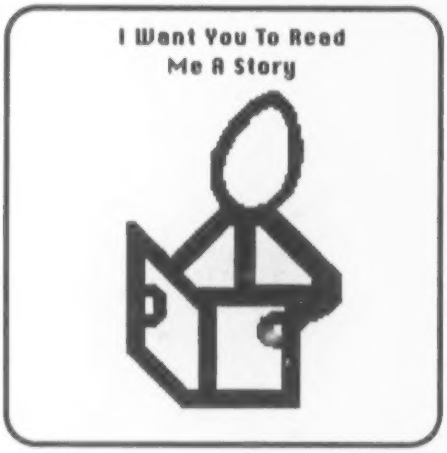
Page 7



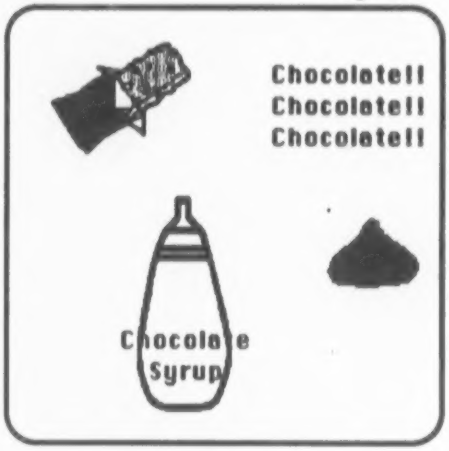
Page 8


I Want A Taste Of That Good Stuff!!

Page 9


I Want You To Read Me A Story

Page 10


Chocolate!!
Chocolate!!
Chocolate!!
Chocolate Syrup

"Everyone Communicates!" Overlays and Vocabulary

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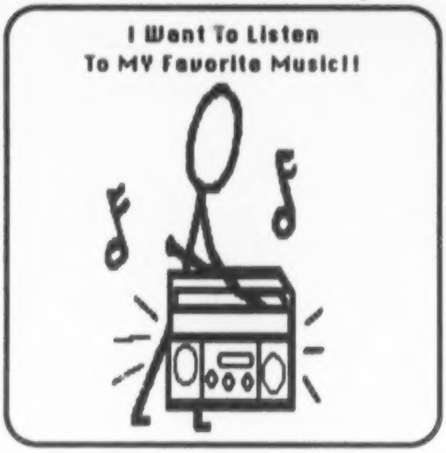
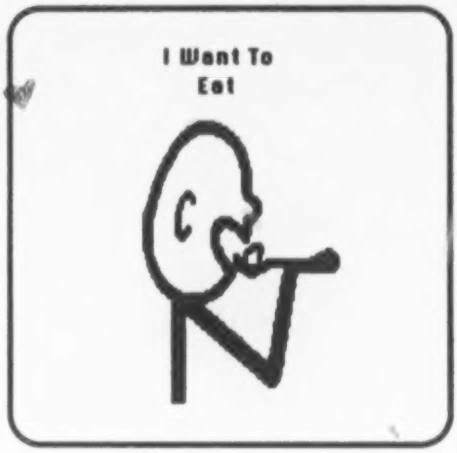
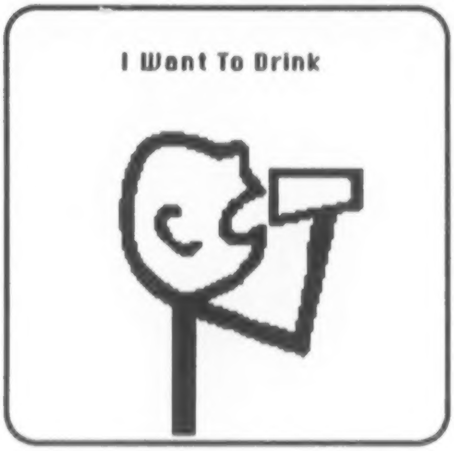
Page 11


I Want To Listen
To MY Favorite Music!!

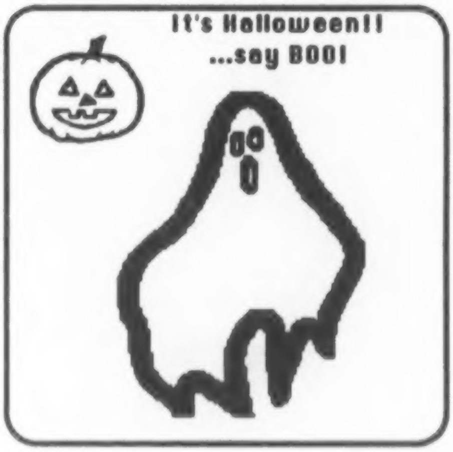
Page 12


I Want To
Eat

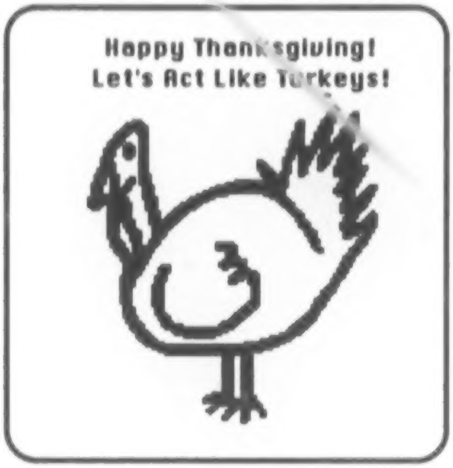
Page 13


I Want To Drink

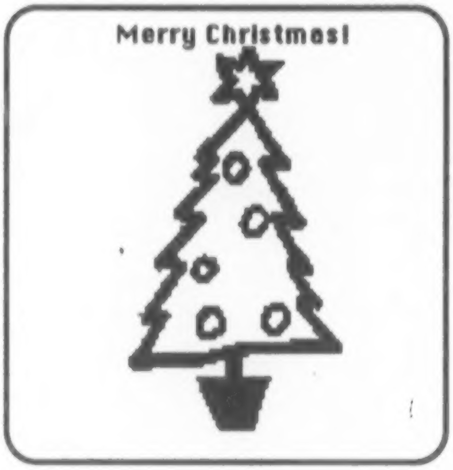
Page 14


It's Halloween!!
...say BOO!

Page 15


Happy Thanksgiving!
Let's Act Like Turkeys!

Page 16


Merry Christmas!

"Everyone Communicates!" Overlays and Vocabulary

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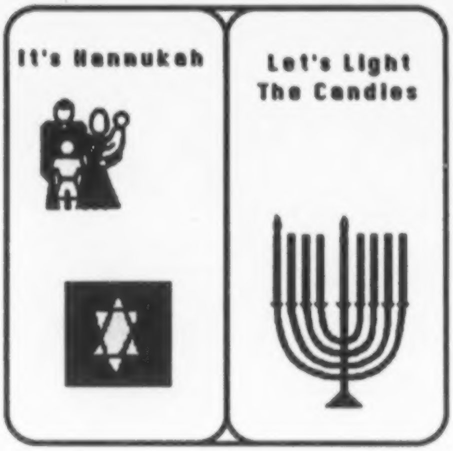
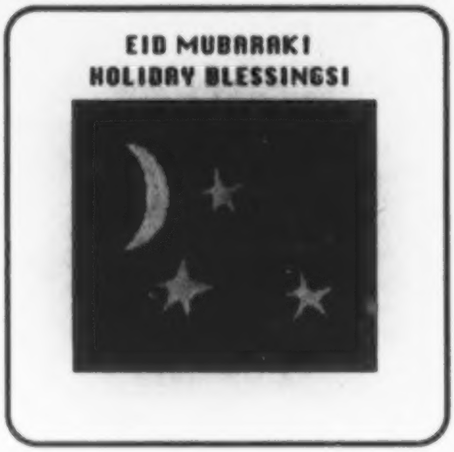
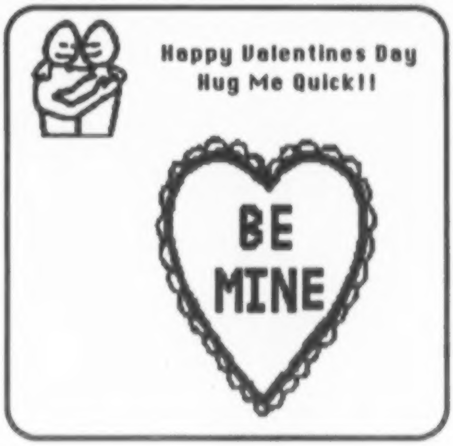
Page 17


It's Hannukah
Let's Light The Candles

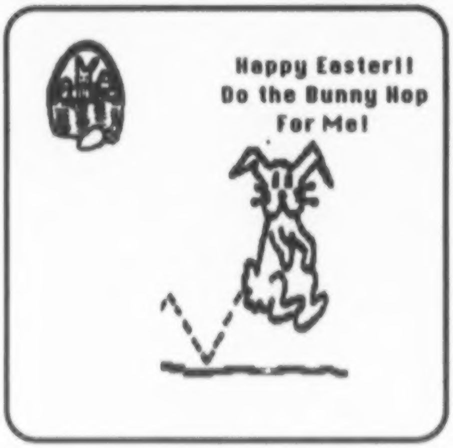
Page 18


EID MUBARAK!
HOLIDAY BLESSINGS!

Page 19


Happy Valentines Day
Hug Me Quick!!
BE MINE

Page 20


Happy Easter!!
Do the Bunny Hop
For Me!

"Everyone Communicates!" Overlays and Vocabulary

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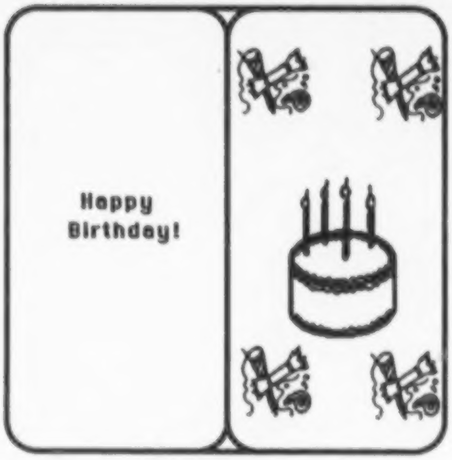
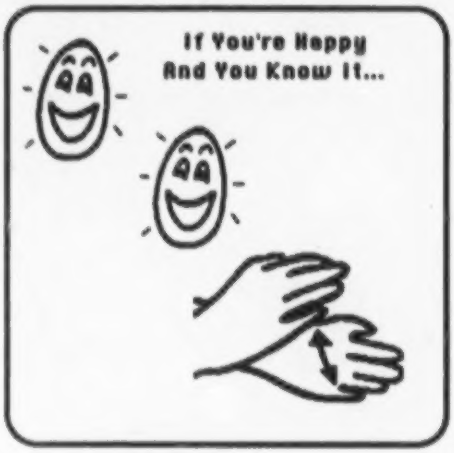
A B Page 21


Happy Birthday!

B
Happy Birthday To You..
Happy Birthday To You...
Happy Birthday Dear Friend...
Happy Birthday To You! *

Page 22


If You're Happy And You Know It...

If you're happy and you know it...
Clap your hands!
If you're happy and you know it...
Clap your hands!
If you're happy and you know it...
Then your heart will really show it!
If you're happy and you know it...
Clap your hands!! *

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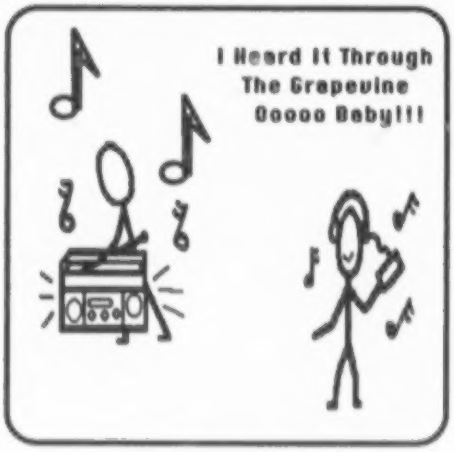
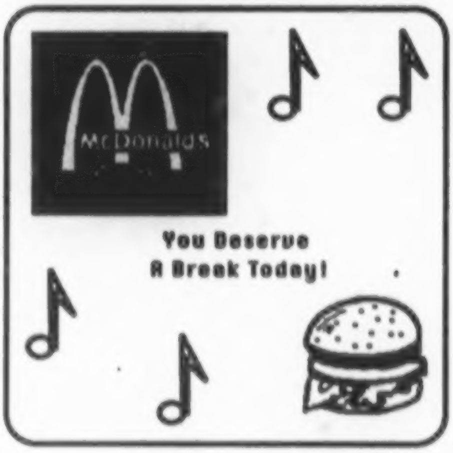

I Heard It Through The Grapevine Ooooo Baby!!!

I heard it through the grapevine..
Not much longer would you be mine..
oooooooo Baby!
I heard it through the grapevine...
And I'm just about to lose my mind *

Page 24


McDonalds
You Deserve A Break Today!

You deserve a break today...
So get out and get away...
To MacDonalds.
Two all beef patties, special sauce,
lettuce, cheese, pickles, onions..
on a sesame seed bun. *

* Although the overlays are printed as shown, the Wolf is programmed with this whole caption.

"Everyone Communicates!" Overlays and Vocabulary

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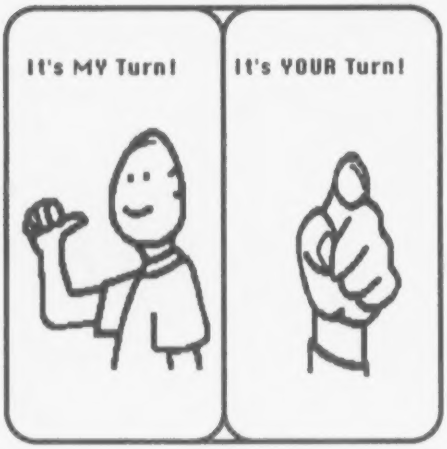
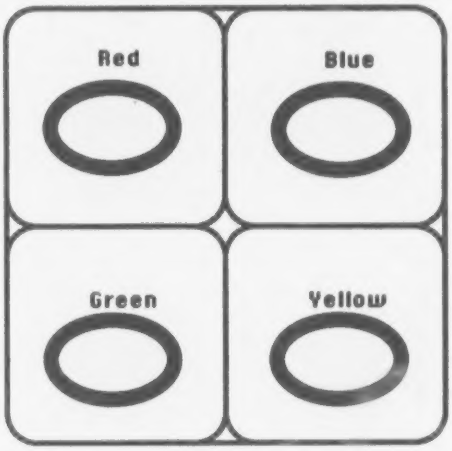
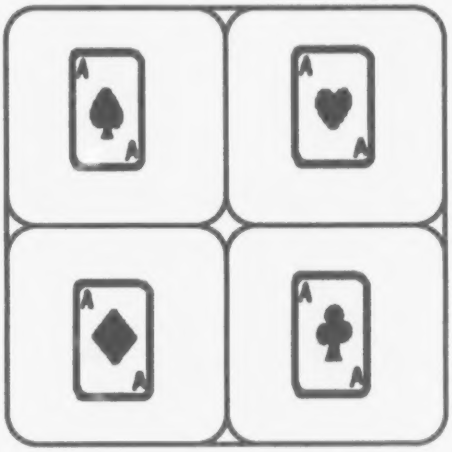
Page 25


It's MY Turn!
It's YOUR Turn!

Page 26


Red
Blue
Green
Yellow

Page 27



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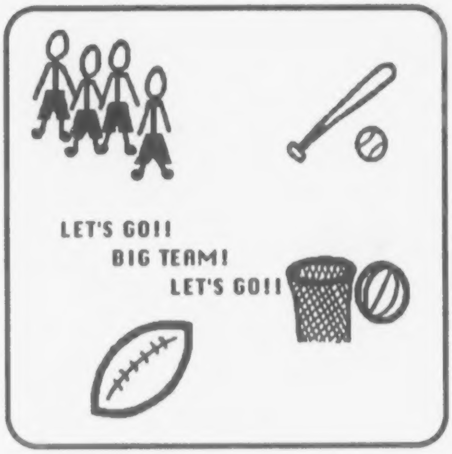
LET'S GO!!
BIG TEAM!
LET'S GO!!

"Everyone Communicates!" Overlays and Vocabulary

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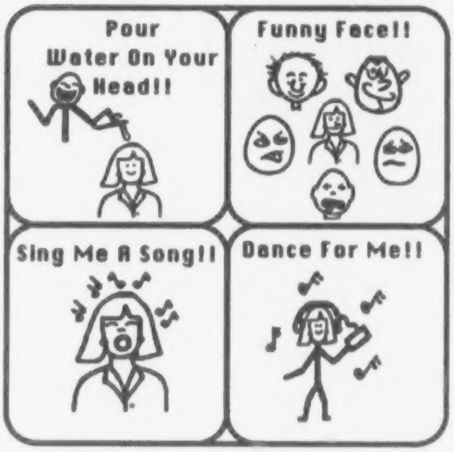
Page 29


Pour Water On Your Head!!
Funny Face!!
Sing Me A Song!!
Dance For Me!!

I say...Teacher, pour water on your head!
I say... Teacher, Sing me a Song!
I say... Teacher, Make a funny face!
I say... Teacher, Dance for me! *

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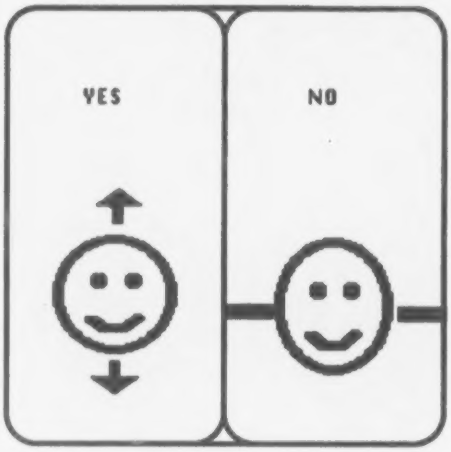

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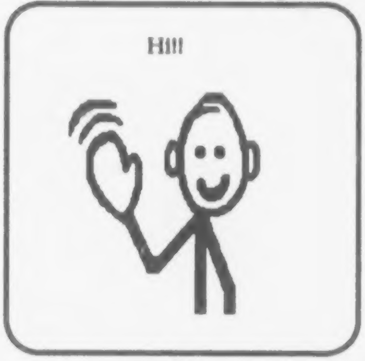

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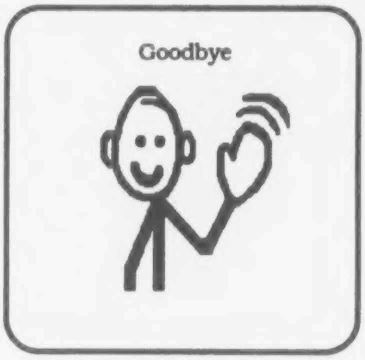

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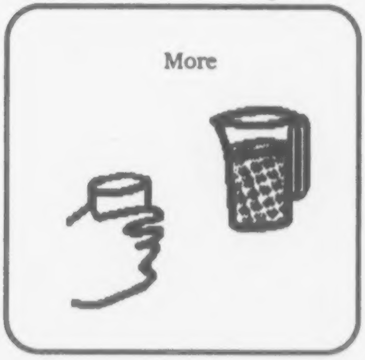

* Although the overlays are printed as shown, the Wolf is programmed with this whole caption.

Communication Control and Choice

by Bob Williams

Anne McDonald was born in Victoria, Australia in 1961. By age three, she was found to have severe cerebral palsy and assumed to have profound mental retardation as well. Shortly after her diagnosis she was placed in St. Nicholas Hospital in Melbourne. After languishing on a back ward there for the next 15 years, Anne summed up the brutal reality of her life and that of far too many other of her contemporaries in this way:

"To be imprisoned in one's own body is dreadful. To be confined to an institution for the profoundly retarded does not crush you in the same way. It just removes all hope." (Crossley and McDonald, 1980.)

In the words and deeds of Anne McDonald and others with severe disabilities worldwide, we can hear the makings of a clarion call if we choose to listen. It is a clarion call to action similar to one issued nearly a decade ago. In 1979, the Center on Human Policy helped stir many of us to action by calling for a universal community imperative. Ten years later, the typical life experiences of people labelled severely or profoundly disabled *demand* that we take yet another step closer to true community.

One way we can do this is by issuing a communication imperative which affirms and asserts that: Every person regardless of the severity of their disabilities, has the right and the ability to communicate with others, express every day preferences and exercise at least some control over his or her daily life. Each individual, therefore, should be given the chance, training, technology, respect and encouragement to do so.

Working toward the widespread acceptance and application of this imperative is essential. It can help to focus vitally needed attention and resources on what we can do to enable individuals with even the most severe disabilities to begin to conquer and replace:

hopelessness with hope;
boredom with curiousity;
learned helplessness with learned initiative;
superimposed passivity with turn- and risk-taking;
speechlessness with meaningful expression;
confusion, anger and resentment with choice;
and, darkness at the end of the tunnel with light.

We owe a tremendous debt to, among others, **Ed Roberts, Doug Guess, Anne Donnellan, Anne McDonald, Mayer Shevin, Luanna Meyer, John O'Brien and Judith Snow.** For thanks to their bold efforts, we have learned that one of the best ways to *empower* people with severe disabilities in the community is to encourage them to make choices and communicate more throughout their daily lives.

But we can never be satisfied with what we already know about the powers of the Four Cs—Choice, Communication, Community and Control—in the lives of people with severe disabilities. Rather, we must constantly be pushing back the outermost boundaries of our knowledge in these four vital areas. In order to do this effectively, we must at least take the following steps:

1. We must recognize that people with severe disabilities, like all others, have personal preferences, likes and dislikes which they can learn to express through a variety of effective means (Shevin and Klein, 1984).

2. We must realize too, however, that the everyday preferences of individuals with severe disabilities are often ignored because these expressions are viewed by others as "aberrant," "offtask," "noncomplaint," "inappropriate," "excessive," "challenging," "aggressive," "self-injurious," or "nonsensical" and rarely as attempts to communicate valid wants, needs, fears, wishes or desires to others.

Houghton and her colleagues have found that typically "classroom staff respond at extremely low rates to students' expressions of choice or preference." (Houghton, Bronicki and Guess, 1987.) The study showed that staff responded to students' expressions of preference or choice only 15 percent of the time during structured activities and, about 7 percent of the time during unstructured activities. On the positive side, however, when students *were* asked to express a preference or choice, they did so 99 percent of the time (Houghton, Bronicki and Guess, 1987).

3. The Houghton study points up the need to readily identify and begin to redress the barriers faced by persons with severe multiple disabilities to increasing their everyday communication and choice-making. These barriers include being seen as: too "low functioning" to communicate likes or dislikes; unsure what a "choice" is since no importance was ever placed on likes or dislikes; improperly positioned; only able to say five words or less; unable to read or write; unwilling to try to communicate since no one listens anyhow and dependent on unpredictable body movements to convey your every need, want, fear or desire.

4. In addition to recognizing and actively redressing these barriers, it is equally essential to recognize that choices and preferences can be expressed in a variety of ways, including: pointing; smiling or using other facial expressions; gesturing; signing; using a picture board; eye gazing; selecting one kind of food over another; nodding or shaking one's head to indicate yes or no; tuning in a favorite radio or TV station; wearing favorite clothes; sleeping in as late as one can or doing one's best at what one enjoys.

In fact, often a person's ability to express a preference or choice is *most limited* by others' unwillingness or inability to pick up on what the individual is saying and how he is saying it.

5. Encouraging each individual to express as many every day preferences a possible truly is *imperative*. This can b done by encouraging the person to decide when to get up on weekends and holidays; when to go to bed; whether to shower before bed or in the morning; who will help him/her eat, bathe, dress, etc.; what to wear; what to eat; what to do with free tim and who to do it with and when it is time fo a coffee break.

6. Allow yourself to be guided by thes expressions of preferences as much a possible. This helps the person make th connection between having likes and di likes and making actual choices in lif Frequent practice in turn-taking has show promise as an effective elixir in allowin some individuals to compensate for thei severe intellectual impairments and ove whelming sense of learned helplessnes and "superimposed" passivity (McDonal and Gillette, 1986). If necessary, structur also can be added by:

- Limiting the person's choices to one o two distinct options first;
- Presenting a set of real choices to th individual;
- Presenting the individual with a set o choices either of which would be accep able and age-appropriate for him/her t [illegible] (Shevin and Klein, 1984);

7. Demand that assistive technology be liberating for people with severe disabilities. Never make such individuals slaves to devices which are ill-suited to meet their unique needs and abilities. Avoid dependence on high tech systems which tend to be too costly, large and bulky, impersonal and sophisticated to make for natural communication.

8. Concentrate on identifying, strengthening and building upon an individual's existing communication and choice-making skills. The time for expanding choice, communication and control in the lives of *all* people with severe disabilities is *now*. As Anne McDonald has pointed out:

> *"Unless someone makes a jump by going outside a...person's previous stage of communication, there is no way the speechless person can do so. Failure is no crime. Failure to give someone the benefit of the doubt is."*

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Center on Human Policy (1979). *The Community Imperative*. Syracuse, New York.

Crossley, R. and McDonald, A. (1980). *Annie's coming out*. New York: Penguin.

Houghton, J. Bronicki, B. and Guess, D. (1987). "Opportunities to express preferences and make choices among students with severe disabilities in classroom settings." *The Journal of the Association for Persons with Severe Handicaps*. Vol. 12 (1), pp. 18-27.

McDonald, J. and Gillette, Y. (1986). "Communicating with persons with severe handicaps: Roles of parents and professionals." *The Journal of the Association for Perons with Severe Handicaps*. Vol. 11(4), pp 255-65.

Shevin, M. and Klein, N. (1984). "The Importance of Choice-Making Skills for Students with Severe Disabilities." *The Journal of the Association for Persons with Severe Handicaps. Vol. 9(3), pp. 159-166.*

MUSIC
REPAIRS

Bob Williams (center) and friends enjoying the sights during the TASH Conference, December, 1988, Washington, D.C.

Language, Speech, and Hearing Services in Schools, Volume 21, 28–36, January 1990

COMPARISON OF ADULT-INITIATED VS. CHILD-INITIATED INTERACTION STYLES WITH HANDICAPPED PRELANGUAGE CHILDREN

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Division of Communication Disorders, Louisiana State University, Baton Rouge, LA

Speech-language pathologists are increasingly providing intervention to younger and more severely handicapped children. The methods and strategies that the adult uses in interacting with this population are important considerations in treatment. The results of this study comparing adult-initiated vs. child-initiated interaction styles indicate that prelanguage children engage in a greater frequency and higher developmental level of communicative behaviors when the interaction is child-initiated.

KEY WORDS: early intervention, infants, language, whole language

Many intervention programs currently being used with prelanguage children provide direct and systematic instruction to increase the child's use of discrete communication skills selected according to a normal sequence of development. The speech-language pathologist (SLP) identifies a specific communicative behavior and provides activities designed to elicit and reinforce the targeted skill. Thus, interaction is largely adult-initiated and controlled (Schafer & Moersch, 1981; Shearer & Shearer, 1976). In contrast, proponents of whole language theory or naturalistic language intervention approaches advocate a more socially oriented, child-initiated and child-controlled interaction style of treatment (Bricker, 1986; Goodman, 1986; Newman, 1986; Warren & Rogers-Warren, 1985). Although this approach primarily has been discussed in relation to children who are developing spoken and written language skills, it also is relevant to children functioning within the prelanguage phase of development.

The adult-initiated and child-initiated approaches to treatment differ in both their philosophical bases and practical implementations (Bricker, 1986; Fey, 1986). Within adult-initiated treatment approaches the acquisition of increasingly more complex communication skills, in accord with the normal developmental sequence, is viewed as the manner in which language is learned. Specific phonological, semantic, syntactic, pragmatic, or preverbal communication skills are identified, taught and generalized to various communication settings (Gray & Ryan, 1973; Horstmeier & MacDonald, 1978; Neisworth, Willoughby-Herb, Bagnato, Cartwright, & Laub, 1980; Nelson, 1979; Roberts & Schaefer, 1984; Shearer & Shearer, 1976). Language products, such as the use of a class of speech sounds, syntactic structures or pragmatic behaviors such as joint focus are of primary importance.

In contrast, whole language proponents view the developmental sequence as the accomplishments of language learning, and not the learning process itself (Goodman, 1986; Newman, 1986; Winitz, 1983). The process lies within the realm of social interaction in which children discover that behaviors serve communicative functions, and that different behaviors communicate different meanings (Bates, Benigni, Bretherton, Cameroni, & Volterra, 1977, 1979; Bloom, 1975; Bricker & Bricker, 1974; Bricker & Carlson, 1981; Cromer, 1976; Miller, Chapman, Branston, & Reichle, 1980; Snow, 1984; Stern, 1977; Tronick, 1981, 1982; Tronick, Als, Adamson, Wise, & Brazelton, 1978). Development is seen as the emergence of new communication skills as the child's knowledge of the physical and social world expands, creating both the ability and the need for greater language refinement. The process of interacting in order to share meaning and express control over others is of primary importance.

The adult-initiated style of interaction operates with the assumption that language is divisible into parts. Cognition and social development are viewed as aspects of development that are closely related to but separable from language. Language itself can be thought of as having interrelated components that develop, and therefore can be taught, as discrete behaviors (Bishop, Copley, & Porter, 1986; Cameron, 1986; Shearer & Shearer, 1972, 1976; Weiss, 1981).

The child-initiated style of interaction assumes that language is indivisible from a context of shared meaning and social use, and that children discover the properties of language through immersion in the communicative process. As adults attribute meaning and communicative significance to behaviors produced by the child, including burps, limb movements, body posturing, and vocalizations, the child becomes an active participant in the communication process. These unintentional movements and vocalizations cue the adult to respond to the child, a process that gradually enables the child to discover that it is his/her own behavior that creates the effects upon the social environment, and allows intentionality in these behaviors to emerge (Bates, Camaioni, & Volterra, 1975; Mahler, 1975; Snow, 1984; Tronick, 1981, 1982).

The philosophical differences between adult-initiated approaches and the more whole language child-initiated approaches result in differences in practical implementation within treatment. These differences include the types of goals that are targeted, the design and implemen-

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tation of the activity, the types of communication acts that the child engages in, the characteristics of the responses expected from the child, the manner in which greater complexity in the child's communications is facilitated, and the type of feedback and reinforcement that is provided (see Table 1). These differences refer to the behaviors that are exhibited by the adult within adult-initiated and child-initiated interactions.

The present study was designed to determine if these two interaction styles also resulted in different behaviors exhibited by the child. That is, whether prelanguage handicapped children communicate differently under conditions of adult-initiated versus child-initiated interactions. It was hypothesized that children would exhibit a higher frequency of communicative vocalizations, limb movements and body postures when their spontaneously occurring behaviors were treated as initiations than when attempts were made to elicit communicative behaviors. It was further hypothesized that the developmental level of the communicative behaviors produced by the children would be higher when their spontaneously occurring behaviors were treated as initiations than when attempts were made to elicit communicative behaviors.

METHOD

Subjects

Subjects were five multiply handicapped children between the ages of 2:6 and 2:10 years. The subjects were referred by an area early intervention project. A multidisciplinary assessment battery indicated that communicative abilities were at a prelanguage level. Results of the Battelle Developmental Inventory (Newborg, Stock, Whek, Guidubaldi, & Svinicki, 1984) placed two subjects at the 9-month normative level for communication development, and three subjects between 12 to 17 months. None of the children were producing meaningful words, and all had limited repertoires of vocal behaviors. Four of the subjects demonstrated cognitive skills at a level greater than 1 year below their chronological age (see Table 2). Behaviors such as self-stimulation and perseveration occurred frequently in the actions of three of the subjects. Self-stimulatory behaviors were defined as highly repetitive motor behaviors and included spinning, banging or flipping objects, eye rubbing, or rocking. Perseverations involved the continuation of a response long after it was appropriate.

All of the subjects exhibited complex medical histories, including cerebral palsy, febrile seizures, microcephaly, and in four of the subjects a reported history of recurrent ear infections and otitis media. Neonatal complications were noted in the case histories of all of the subjects that included respiratory distress syndrome, apnea, intraventricular hemorrhage, and feeding problems. Two of the subjects were premature, with a gestational age of 24–25 weeks.

Procedures

An adult female speech-language pathologist with 13 years of experience in early intervention interacted with each child under conditions of adult-initiated interaction and child-initiated interaction, as outlined in Table 1. The SLP had not interacted with any of the subjects prior to the videotaped session. The early intervention project staff identified toys that each child was familiar with and responsive to. The toys included stacking rings, wooden puzzles, large-sized peg boards, activity boards with

TABLE 1. Differences between adult-initiated vs child-initiated interactions.

Adult-initiated	*Child-initiated*
Specific semantic, phonological, syntactic or pragmatic skills are targeted.	A level of communication is targeted; content, form, and use are indivisible.
Adult designs an activity to elicit targeted behaviors with high frequency.	Activity is designed to allow for a variety of communicative behaviors to occur; adult interprets.
Specific forms are taught receptively (pointing to exemplars) and expressively (shaping productions)	Adult imparts meaning on child's behavior by interpreting it as a request, comment, protest, and so on.
The adult form is used as the standard for an acceptable response.	Adult adds complexity to spontaneously occurring behavior.
A one-to-one relationship is established between a word and its referent.	Communications are interpreted variably to create novel effects with limited communicative behaviors.
Imitation and shaping are used to elicit closer approximations to a target behavior.	Adult provides models; the highest communicative behavior the child produces is responded to each moment.
Nontargeted behaviors are considered irrelevant and interfere with elicitation of targeted responses.	Any behavior interpretable as communication; adult imparts contextually appropriate meaning.
Adult feedback focuses on the correctness of the child's response.	Adult responds with contextually appropriate action and words to indicate what child had communicated.
Secondary reinforcers (claps, praise, tokens) reward the occurrence of target behavior.	Behaviors are reinforced through their effects—controlling the actions of the adult and toys.

Sources: (Arwood, 1983; Bailey & Wolery, 1984; Bricker, 1986; Fey, 1986; Ingram, 1977; Leonard, 1984; McConkey, 1984; Mahler, 1975; Mahoney & Weller, 1980; Piaget & Inhelder, 1969; Roberts & Schaefer, 1984; Snow, 1984; Tronick, Als, Adamson, Wise, & Brazelton, 1978; Warren & Rogers-Warren, 1985).

TABLE 2. Characteristics of subjects.

	Subject				
	A	*B*	*C*	*D*	*E*
Chronological age	2:6	2:6	2:8	2:10	2:10
Sex	F	M	M	M	F
Battelle Developmental Inventory Age:					
Communication	0:9	0:9	1:4	1:5	1:2
Cognition	1:2	0:11	1:2	1:10	1:8
Social	—	1:8	1:8	2:10	1:8
Motor	1:0	0:11	0:8	2:3	1:9
Hearing					
Normal acuity?	yes	yes	yes	yes	yes
Otitis Media?	yes	yes	yes	—	yes
Medical					
Gestation weeks	25	36	25	36	36
Seizures	yes	yes	no	no	yes
Cerebral Palsy	yes	no	yes	no	no
Other					microcephaly
Behavior					
Self-stimulation	no	yes	yes	yes	no
Perseveration	no	yes	yes	yes	no

dials, buttons and levers, stuffed animals, puppets, and functional items such as hair brushes and dishes. The level of communication goals that were targeted for intervention also were provided by the project staff.

Each child was videotaped during a single 50-minute session of interaction, for a total of 25 minutes under each condition (see Table 3 and 4). The same adult interacted with all five subjects over a period of two consecutive mornings. Three of the subjects (e.g., Subjects A, B, and E, selected randomly) were placed first in the adult-initiated interaction condition, and two were placed first in the child-initiated interaction condition (e.g., Subjects C and D). All sessions took place during the morning hours at the child's preschool building. The room was quiet, with only the adult and the child present. Only those toys presented by the adult were accessible to the child to minimize distractions and maximize opportunities for interaction. The children were seated either on the floor or in a pommeled chair, depending on the child's ability to sit unassisted. Under both conditions the SLP actively attempted to maintain the interaction through animated expression, changes in vocal inflection, and eye contact.

In the adult-initiated condition, the adult presented a stimulus to the child, such as a stacking ring, a doll, or a large wooden puzzle (see Table 3). The adult targeted a response to the toy and a communicative behavior, based on the child's level of functioning. For example, the targeted response for subject E to a ring-stacking toy was to stack the rings from large to small on the peg, and the targeted communicative behavior was to request the ring by imitating an approximation of the word "on." The following exchange is an example of such an interaction.

In the child-initiated condition, each interaction began when the child produced a behavior that the adult chose to respond to as being communicative. Generally, it was the highest level behavior that the child produced at that moment in time. For example, if the child vocalized and pointed while moving a foot, the vocalization and point were interpreted by the adult. The behavior produced by the child could occur fortuitously and without apparent communicative intent. As a result of the child's behavior, the adult provided a consequence in the form of some action with toys at the child's developmental level and contextually appropriate comments. The following exchange is an example of such an interaction (see Table 4).

The adult's role was to provide a response that imparted meaning to the child's behavior, so that, for example, a child's touch to the hair resulted in brushing the

TABLE 3. Example interchange between adult and child within the adult-initiated treatment strategy.

Adult: (Presents a red ring).
"Lets put this one on."
(points)
"Tell me 'on'."
Child: (Looks at adult and reaches for ring).
Adult: "Tell me 'on'."
Child: (Produces vocalization and taps toy).
Adult: "OK, you put it on"
(assists child in putting ring on peg.)
"Yea, you put it on"
(claps)
Adult: (presents a green ring)
"Lets put this one on. Tell me 'on'."
Child: (Produces a vocalization and looks at adult).
Adult: Attempts to shape a closer approximation by modeling the target word.
Child: Produces an approximation of the target vowel.
Adult: "On! Good girl, you put it on" and assists child in stacking the ring. Claps at child's success.

TABLE 4. Example interchange between adult and child within the child-initiated treatment strategy.

Child: (Repositions body away from some stacking rings that are placed on the floor.)
Adult: (Interprets the body turn *as if it were meaningful and communicative* by making a toy bird turn one of the rings)
"Oh, you want the birdie to *turn* it."
Child: Looks at the adult, then at the rings, and touches the rings.
Adult: (Interprets the touch as a request to repeat the action, and again makes the bird turn the rings)
"Oh, you want him to turn the ring again"
"Turn—turn" (spoken in bird voice)
Child: Smiles, looks at bird and turns the rings herself
Adult: (Interprets the child's action as a request for a turn)
"You want to turn another ring?"
(makes the bird assist the child in adding and turning a new ring).
Child: (Leans back and touches her hair fortuitously while vocalizing, and looks at the adult.)
Adult: Interprets the new behavior as if it were meaningful and communicative by saying "Oh, you want the bird to kiss you," and makes the bird kiss the child at the point of the touch.

child's hair, a child's foot movement resulted in a puppet chewing on the child's toes, and a hand movement resulted in obtaining a puzzle piece or peg. Any apparent attempt on the child's part to cause that adult response to recur was consequented by repeating that behavior, but if no intentional behavior was observed then any fortuitously occurring behavior was interpreted and responded to.

Scoring

The middle 15-minute segment of each video recorded interaction session was sampled by analyzing the final 2 minutes of each 5-minute interval, resulting in 6 minutes of analyzed behavior for each subject per condition. This yielded approximately 500–700 behaviors per subject for each condition. Written transcriptions were made describing the behaviors of both the adult and the child (e.g., Adult: "You want to pick it up?" /looks at child, then bear—makes bear pick up toy/. Child: /giggles—smiles—vocalizes (vowel)—looks from bear to adult to bear—covers mouth/). The behaviors exhibited by the child were then scored using the scale detailed in Appendix A, called the Infant Scale of Nonverbal Interaction (ISNI). This scale was developed in order to provide an instrument for describing interactions comprehensively, rather than to sample representative elicited communicative behaviors (e.g., Brigance Inventory of Early Development (Brigance, 1978), or Portage Project Checklist (Shearer & Shearer, 1976).

The ISNI incorporates sufficient behaviors at various levels of development to allow for a complete categorization of the numerous types of behaviors spontaneously exhibited by the children. It provides for the categorization of a child's communicative behaviors into the categories of communicative vocalizations, limb actions, and facial/body postures. The communicative behaviors within each type are further categorized into six developmental age levels from 1 to 18 months. These levels correspond to the substages of sensorimotor development identified by Piaget (Morehead & Morehead, 1974; Piaget, 1962; Piaget & Inhelder, 1969).

Validity

Items on the Infant Scale of Nonverbal Interaction were derived from a variety of normative sources (Bates, Camoioni, & Volterra, 1975; Bluma, Shearer, Frosham, & Hilliard, 1976; Brigance, 1978; Dore, 1986; Eimas, Sigueland, Jusczyk, & Vigorito, 1971; LeMay, Griffin, & Sanford, 1978; Prutting, 1979; Reeder, 1977; Schafer & Moersch, 1981; Shearer & Shearer, 1976; Trevarthen, 1977). In order to be included on the scale, a communicative behavior had to be referenced as occurring at a specified developmental level on two sources of normative data, such as a research article, a developmental table, or a criterion-referenced test.

Reliability

Reliability of observations was established by producing a written record of the communicative behaviors exhibited by the child. The counter on the VHS equipment was used to identify tape segments. All initial observations and written records were made by the SLP who originally interacted with the children. Tape segments consisted of recording the sequence of behaviors that occurred within a communicative turn, generally 3–10 seconds of behavior. The segment was viewed repeatedly, with each repetition focusing on a specific behavior (e.g., hand movements, then leg movements, then facial movements, and so forth). This procedure resulted in a comprehensive transcript of the child's behavior.

Five of the 2-minute segments, randomly selected from across all subjects were observed and recorded by a second observer, who was uninformed about the nature or purpose of the study. This observer had early childhood experience, but not with handicapped children. A one-half hour instructional session was provided in which the observer was trained to describe a behavior (e.g., "the child smiled and moved her hands" rather than "the child was excited"). The second observer then viewed the taped segments in accordance with the procedures followed in the initial scoring. The observations of the uninformed observer were compared to the original written transcript. Points of agreement were designated with a checkmark, while differences were written above the original transcript in parentheses. The percentage of agreement was calculated. Percent agreement between the first and second observer was .94. Only three differences were obtained between the second observer and the transcript for behaviors that were scored as communicative, and all of these were in the category of gazing at the adult during the interaction. Differences generally focused on details in body movements, such as "moved fingers and touched hair" versus "touched hair."

Reliability of scoring was established by having the SLP and a graduate student in speech-language pathology independently score the transcripts from five randomly selected 2-minute segments. Each behavior reported on the transcript was assigned to a developmental level and category of behavior from the ISNI. Inter-rater reliability (i.e., percentage of agreement) between the first and second scorer was .96.

RESULTS

Results are based upon the frequency of communicative behaviors occurring in the child-initiated and adult-initiated conditions. Differences between the two conditions are reported for each child at three levels—total frequency of communicative behaviors, frequencies of the three categories of Communication Types, and frequencies of five categories of Communication Levels. For each categorization, a difference between the two conditions is judged to have occurred if all five of the subjects produced a higher frequency of a communicative behavior in one condition, either the child-initiated or adult-initiated. This decision results in a .031 significance level for each comparison according to the Sign Test (Haber & Runyon, 1974, pp. 300–302).

Table 5 displays the frequency of occurrence of communicative behaviors classified by communication type—vocal, limb, and facial/body. The right-most column displays the total number of behaviors elicited in the adult-initiated and child-initiated conditions for each child. All children produced more total communicative behaviors in the child-initiated than in the adult-initiated conditions.

The categorization by Communication Type shows that the frequency of facial/body movements was higher for all subjects in the child-initiated than adult-initiated interactions. Differences in vocalizations and limb movements did not consistently differ across the two interaction conditions.

Table 6 shows the frequency of communicative behaviors for each child in each condition categorized by Communication Level. All children showed more Level III and Level V behaviors in the child-initiated than the adult-initiated conditions.

DISCUSSION

The results of the study indicated that the manner in which an adult interacted with prelanguage handicapped children did produce a change in the behaviors exhibited by preschool, handicapped children. Use of the child-initiated approach resulted in overall higher frequencies of communicative behaviors, a higher number of limb movements, and a higher number of Level III and Level V behaviors.

In general the type of communicative behaviors exhibited by individual subjects was consistent across interaction conditions. That is, children who produced more limb movements than vocalizations and so forth did so within both interaction approaches. One notable exception was Subject C who suffers cerebral palsy and who exhibited limited head, body and limb control under the adult-initiated condition. When small and fortuitously occurring movements were interpreted as communicative both the rate and the level of these behaviors increased. The child worked to keep his head raised to watch the toys, frequently producing smiles and grasping motions that were interpreted as requests for recurrence or change in the action.

TABLE 5. Summary of subject responses by communication type.

		Type			
	Initiation	*Vocal*	*Limb*	*Facial/Body*	*Total*
Subject A	Adult	5	24	17	46
	Child	5	33	21	59
Subject B	Adult	13	41	34	88
	Child	22	49	35	106
Subject C	Adult	32	13	8	53
	Child	35	44	47	126
Subject D	Adult	3	25	26	54
	Child	9	43	29	81
Subject E	Adult	15	56	63	135
	Child	43	44	86	173

TABLE 6. Summary of subject responses by developmental level.

				Level		
	Initiation	*I*	*II*	*III*	*IV*	*V*
Subject A	Adult	5	34	3	4	0
	Child	0	23	11	9	16
Subject B	Adult	5	61	12	2	8
	Child	1	39	27	13	26
Subject C	Adult	2	39	4	0	8
	Child	6	56	39	2	23
Subject D	Adult	1	26	9	2	16
	Child	0	12	23	8	38
Subject E	Adult	1	94	5	15	20
	Child	1	88	46	9	29

For all of the subjects the level of vocalizing either was the same between conditions or was higher in the child-initiated condition. Direct attempts to elicit and reinforce vocalizations within the adult-initiated condition did not increase their occurrence relative to spontaneous productions in the child-initiated interaction. The greatest difference in vocalizations between the two conditions was observed in Subject E. When attempts were made to elicit vocalizations under adult-initiated conditions she exhibited many behaviors that rejected and terminated interaction. Her level of vocalizations was greater within child-initiated interactions, particularly when the adult performed a variety of changing actions in response to her utterances.

When the communicative level of the behaviors was examined some interesting trends were noted. Stage I behaviors did not differ between the groups, occurring with low frequency under both conditions. These behaviors are normatively appropriate between the ages of 1 to 3 months and generally are reactive and nonspecific to a particular stimulus. All of the subjects generally produced behaviors that were at a higher developmental level than the squeals, random body movements, and reflexive smiles characteristic of this period.

In general Stage II behaviors occurred with high frequency throughout the interactions under both conditions. These behaviors included vocalizations that were nonspecific but directed towards a toy or the adult, reaches for objects that were placed within close range, joint focus to something presented by the adult, and smiles and frowns directed at the adult. A higher occurrence of this level of behavior was observed under the adult-initiated condition for four of the subjects, indicating that the children were responsive to the adult and to the stimuli that were presented. However, for Subjects B and D many of these behaviors were self-stimulatory or perseverative in nature consisting of flipping or banging objects that were placed within reach.

Stage III behaviors included attempts to imitate speech sounds, vocalizations with an intent to elicit action or assistance, imitations of gestures, gestures with an intent to elicit action or assistance, and smiles in response to teases or entertainment. For all subjects this level of interaction was higher under child-initiated conditions. One aspect of the interaction that appeared to have contributed to the higher frequency of behaviors at this developmental level was the child's perception of control. At various points within the child-initiated play, the children appeared to make the discovery that their actions controlled the behaviors of the adult. This discovery resulted in observably more intentionality and maintenance of the interaction. Behaviors such as repeating an initially fortuitously occurring behavior, coordinating behaviors such as looking and reaching, watching objects as they moved, giggling, and vocalizing began to occur with high frequency at identifiable points within the interactions.

Level IV behaviors occurred with low frequency under both conditions. Vocalizations at this level are characterized by a variety of consonants and are highly imitative, behaviors that were generally above those produced by any of the children. Most of the level IV behaviors that were exhibited included imitating functional actions. A higher frequency of the communicative actions produced by the children were rated at Level V. Most of these behaviors consisted of points, reaches and grabs at objects or toys to indicate requests for reactivation or possession. For all subjects they occurred with greater frequency under child-initiated conditions.

In many instances the manner in which the adult responded to the child contributed to the greater occurrence of Level III and V behaviors within child-initiated interactions. At points where the children engaged in self-stimulation or inattentive behaviors such as looking away, these behaviors were consequented with action as if they were intentional and meaningful. A responsive action performed with the toys by the adult generally resulted in the production of a higher level behavior by the child, such as an intentional look or reach toward the objects. Within the adult-initiated interaction, these behaviors were viewed as inappropriate and therefore were not reinforced. Attempts made to eliminate them by interrupting the self-stimulatory behavior and directing the child's attention to the target stimuli resulted in a higher frequency of Level II looking and reacting.

In summary, many of the properties inherent in the child-initiated style of interaction appear to be conducive to the production of communicative behaviors in handicapped prelanguage children. However, this study looked only at the immediate effects of adult interaction style on the communicative behaviors of prelanguage children. Further studies exploring the longer-term effects need to be conducted in order to determine if child-initiated interactions are effective in facilitating the development of speech and language.

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APPENDIX A

Infant Scale of Nonverbal Interaction

PROCEDURES

I. Recording Interactions

1. Videotaped recordings are made of equal segments of interaction under both adult-initiated and child-initiated conditions.
2. The interactional behaviors of both the child and the adult are observed in order to provide the context for making judgments concerning the type and level of interactive behaviors exhibited by the child.

II. Sampling Interactions

1. Representative samples of the behavior are obtained by selecting a segment of the tape and then recording all of the behaviors that occurred during specified intervals. For example, 6 minutes of continuous data were obtained by sampling three 2-minute segments, (i.e., the final 2-minutes of each 5-minute interval).
2. Intervals are measured using the counter on the VHS equipment. This procedure allows for a segment of the tape to be viewed repeatedly, which is particularly important because of the multiple behaviors simultaneously observed and recorded.
3. An event recording procedure is used, where the presence of each criterion behavior is recorded every time that it occurs during each 2-minute interval.

III. Coding Interactive Behaviors

1. Scoring is conducted by recording each behavior in the sequence that it occurs within the interaction. First a *Developmental Level* is noted, followed by the appropriate *Category* and *Type*.
2. The developmental level of the interactive behavior are recorded according to the following:

LEVELS OF INTERACTIVE BEHAVIORS

a. Level I (1–3 Month Rating). These behaviors occur in response to general stimulation, and are usually in *reaction* to the adults actions or the general environment.
b. Level II (4–6 Month Rating). These behaviors occur in response to play between people, generally reflecting turn taking but not specific control over others.
c. Level III (7 to 9 Month Rating). These behaviors occur when the infant initiates control in the interaction, by imitating actions and reacting as participants share interaction with objects.

d. Level IV (10 to 12 Month Rating). These behaviors include imitations of actual *functional* actions and conventional gestures or vocalizations; their meaning is usually clear in context.

e. Level V (13 to 18 Months Rating). These behaviors are directed at getting the adult to share objects, or to control the game so the adult keeps playing.

3. The Category of behavior is recorded according to the following:
   a. Vocalizations, including nonspeech sounds, speech sounds, and words.
   b. Limb Actions, including movements and gestures of the hands, arms, legs, and feet.
   c. Facial and Body Postures, including movements of the eyes and mouth and body positioning that are social.
4. The specific Type of behavior is recording according to the following types, listed by Developmental Level and Category:

I. 1–3 Month Rating

Vocalizations
1. Undifferentiated Vocalizations done to general environment, rather than a specific stimulus
2. Generalized squeals or chuckles of pleasure or frustration
3. Coos and other vowel vocalizations produced to general stimuli
4. Responds to others' vocalization with a vocalization in vocal play, not play with objects

Limb Actions
1. Random body movements showing excitement
2. Startle response
3. Attract attention with body movements
4. Anticipatory activity (excitement when object seen)

Facial and Body Postures
1. Maintains eye contact when interacted with
2. Smiles or widens eyes when talked to
3. Looks at people, not in response to play with objects
4. Visually follows people and objects

II. 4–6 Month Rating

Vocalization
1. Social vocalizations, including vocalizing when action done to infant, squeals when talked to, cries if disrupted, laughs to interaction.
2. Vocalizations characterized by intonation changes in cooing. Bilabial consonants */p/ /b/ /m/* produced, repetition of CV syllable, consonants, */m/ /b/ /n/ /d/ /g/ /l/ /w/ /h/ /p/ /t/*
3. Imitates pitch and loudness changes
4. Vocalizes directly to another person
5. Vocalizes while playing with toy
6. Turn taking in vocalizations

Limb Actions
1. Social refusals, including pulling away, shaking head
2. Reacts to social negatives with cries and frowns
3. Wiggles limbs when adult initiates a familiar gesture
4. Child reaches toward another person or close object

Facial and Body Postures
1. Shows anticipation, including raising arms to be picked up, moving close to another, clinging when held
2. Smiles or frowns at other people, but not because of play with objects
3. Moves to see what is being shown or looked at
4. Joint focus to something presented by adult

III. 7–9 Month Rating

Vocalizations
1. Attempts to imitate speech sounds (may not be same sounds) and CV sequences
2. Vocalizations show changes in pitch, quality, intensity, rate, and duration
3. Vocalizes to have toy reactivated or adult do action
4. Vocalizes at object, then looks to adult and indicates the need for help by a pull, grab, etc.
5. Imitates non-speech sounds (cough, smacking, animal, vehicles)
6. Imitates words without attaching meaning
7. Babbles phrases with 4 or more different syllables, including sounds such as */t/ /d/ /n/ /w/ /f/ /v/ /l/*

Limb Actions
1. Imitates movements like waving arm, patting hand on tray
2. Pushes away unwanted food, object, person
3. Moves limbs to indicate reactivation or recurrence
4. Grabs adults fingers, pulls hand etc. to indicate recurrence
5. Does action for familiar game like pat-a-cake

Facial and Body Postures
1. Smiles and laughs when teased or entertained
2. Pulls back or moves to reject something
3. Uses eye contact to indicate recurrence or help
4. Moves by leaning over or moving forward etc. to follow the actions of adults and objects

IV. 10–12 Month Ratings

Vocalizations
1. Repeats vocalization if it is responded to
2. Fusses, cries, tantrums when desired object removed
3. Expresses negative reaction through vocalization
4. Uses single word to label
5. Imitates a series of sounds said by adult
6. Uses jargon to toys and people as if talking

Limb Actions
1. Points to noticed objects
2. Points to parts of objects upon imitation
3. Imitates actions that are functional (eating, washing. . .) or repeats modeled action to make the event recur
4. Imitates novel gesture
5. Extends toy to give, but doesn't release
6. Gestures to represent an action (wiggles hand to get something to move)
7. Uses social gestures like waving bye-bye or shaking 'no'

Facial and Body Postures
1. Wiggles body to continue a movement like bouncing
2. Moves body to represent an action (rocks to represent a rocking toy)

V. 13–18 Months Rating

Vocalizations
1. Uses five words
2. Uses one word for many meanings
3. Imitates variety of words
4. Uses jargon mixed with real words

Limb Actions
1. Gives objects to adult to get toy to (re)activate
2. Points, reaches, grabs objects or toys to indicate wanting them
3. Repeat actions that produce laughter or attention
4. Uses gestures in combination to indicate wants

Facial and Body Postures
1. Imitates facial movement or expression
2. Leads adult by hand to desired object

VI. 19–24 Months Rating

Vocalizations
1. Vocabulary of 10–50 words
2. Imitates 2–3 word combinations
3. Attempts to describe experiences using jargon mixed with real words
4. Uses a variety of word classes (actions, agents, attributes etc.)

Limb Actions

1. Hands book or object to be read or shared
2. Does a series of relational actions

Facial and Body Postures

1. Does own action if other person will not respond

IV. *Reliability*

1. Scorers are trained until they reach a level of 90% accuracy in coding the behaviors.
2. A coefficients of agreements method is used to estimate reliability of scorer judgments. An index of both the rate of agreement between observers, and instances of agreement are obtained.

IV. *Analysis*

1. Behaviors are tabulated to obtain frequency counts.
2. The obtained data is subjected to statistical analyses specific to purposes of the study.

Prelanguage communication programming for the severely and profoundly handicapped

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The Van Dijk program has been developed, in part, to meet the prelanguage communication programming needs of deaf/blind individuals. This paper represents an interpretation of the Van Dijk procedures especially in regard to their applicability to other severe and profound handicapping conditions. The focus is on instructional interactive methods to be followed. A hypothetical assessment procedure is also suggested to aid a practitioner in locating appropriate communication levels and activities.

Although much has been written about language development theory (Chomsky, 1969; McNeill, 1970), assessment of language (Horstmeier & MacDonald, 1975; Kirk & McCarthy, 1968; Lee, 1971), and language intervention programs and techniques (Guess, Sailor, & Baer, 1974, 1976; Gray & Ryan, 1973), there is little theoretical, assessment, and intervention information pertaining to prelanguage communication skills. The literature focuses narrowly on the area of communication/language. Communication is basically a process to exchange information, whereas language is a structure which one uses to communicate. The current trend seems to make communication synonymous with formal language structures (i.e., oral production, signs, symbols, codes, etc.). This is appropriate only if the human subjects under investigation are capable of dealing with a formalized structured language. For many severely and profoundly handicapped individuals, this synonymity is not warranted. Rather, one must begin dealing with communication as a separate entity from language.

According to Hollis, Carrier, and Spradlin (1976), all teachers of the handicapped must determine the disabled individual's functional receptive and expressive communication channels. For those individuals who are severely or profoundly handicapped, this may involve starting at a point where the meaning and uses of communication are developed and stimulated. For the individual who conceptually cannot separate himself or herself from the environment of objects and people, this may, in essence, mean activities directed toward controlling and affecting one's environment (Harris-Vanderheiden & Vanderheiden, 1977). It appears appropriate, then, to deal with communicative intentions rather than communication in isolation (Leonard, 1978). With the hypothesized relationship between normal cognitive development and linguistic development (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1977), past techniques to foster communicative intentions have focused upon the development of specific cognitive skills to effect communication change. Although this approach does merit attention, a more direct communication training procedure may be worthwhile.

The Van Dijk communication program (Van Dijk, 1965a, b) was originally designed for use with deaf/blind individuals. It is applicable to other severe/profound handicapping conditions, however, especially those accompanied by cognitive deficits. The intent of the Van Dijk program is to develop communicative intentions and communication procedures through conversation using movement, signals, gestures, objects, pictures, signs, or speech. At the present time, validation data on the use of the program with deaf/blind children are being analyzed in Europe. While considering the following discussion, the reader should remember that validation data are forthcoming.

In order to acquire language, a child must have some connection with the social world. It is probable that the asocial child can never fully participate in or appreciate communication, since communication is a social act. In order, therefore, to interface the social aspects with communicative behaviors, the child must realize a number of prelanguage communication accomplishments and concepts. The first of these is the child's awareness that he or she is separate from the environment. The individual must know the boundaries of self as well as the interfacing boundaries of the environment. One typically can recognize whether an individual has such knowledge by observing the way in which the individual manipulates objects. For example, if a severely or profoundly handicapped child immediately mouths objects, always manipulates objects close to the body, or never varies the manner of playing with the objects, then one may hypothesize that the child does not comprehend that the object is separate from himself.

This knowledge of separation is necessary in order for the individual to acquire and display two prelanguage accomplishments: (*a*) that he can communicate; and (*b*) that there are things around him to communicate about and people with whom to communicate. Actively interacting with people and objects helps the child learn specific aspects related to the people and objects. Then as the child develops, he learns that an aspect of an object, person, or event can represent that object, person, or event. Once the child knows that he or she can communicate, that there are things to communicate about, and that those things can be represented using body movements, the child uses idiosyncratic representations to think and to communicate. Eventually, these idiosyncratic representations are replaced by conventional representations or language.

The major mission of the Van Dijk communication program is to help the prelanguage, noncommunicative individual develop communication and eventually language. This is accomplished by using a stage-to-stage procedure which employs movement by the child and the teacher to foster communication awareness.

THE VAN DIJK PROGRAM

The first major procedural stage of the Van Dijk communication program is termed resonance. At this stage the child learns that his or her movements can be used to affect another's behavior. Here one responds to the child's movements as if they were communicative, thereby helping the child learn that his movements can effect change. Emphasis is placed on the development of a primary relationship between the teacher and child to provide the child with a connection to the outside world. Here the teacher's behavior is contingent upon the child's behavior. Initially, one starts with basic movement patterns of the child (e.g., rocking). If the child shows no consistent movement patterns, the teacher must help the child develop movements which can be used in a movement program. Such movements can usually be promoted through the use of shaping techniques and the application of other behavioral principles as a part of the child's regular physical education or physical therapy training. Starting with these nonthreatening movement patterns will help make the necessary later transition to altered body movements easier.

In the resonance stage it is mandatory that the teacher be in the same physical plane with the child (body-to-body). For example, if the child has been observed to rock, the teacher would rock with the child with the child's back against the teacher's chest. Later, after the child demonstrated success in the body-to-body plane, one may proceed to the opposition plane (the teacher facing the child), but some physical contact is still necessary. In resonance, there is no separation in time or space. Receptive resonance is evident when the child shows awareness of the mutual movement (e.g., active participation, smiling, cooing). When the teacher and child move together, the teacher should stop and wait to see if the child provides a cue to the teacher to initiate the movement once again. These expressive resonance cues (e.g., an intentional push backwards against the teacher's chest, patting the teacher's leg) can be developed initially by physical guidance and by following the cue with the desired movement.

Once this signal-to-movement connection has been established, the teacher may begin to create a more complete movement dialogue. Here additional movements and cues are added and an order of movements is estatrinsic reinforcement is necessary, for movement itself is intrinsically reinforcing. Again, the purpose of this procedural stage is not to teach movements but rather to use movement to communicate.

The second stage of the Van Dijk communication program is termed [redacted] At this level, the teacher and the child are separated in space but not in time. For example, the teacher may sit beside the child, remaining in close proximity. The teacher may initiate a familiar movement (with or without a corresponding cue) to determine the child's receptive co-active movement (i.e., an awareness of the mutual movement), or the child may use a signal to initiate a mutual move (i.e., expressive co-active movement). The movement dialogue continues, but because of the separation in space, the child must observe the teacher as the teacher proceeds from one movement to another. Again, sequence and anticipation are developed by gradually building up sequences the child can perform with the teacher. Typically, gross-motor movements are pursued before fine-motor movements. Symmetrical movements (e.g., both limbs moving in the same directional plane at the same time) appear to be easier to duplicate than are asymmetrical movements. Once the child can move through a variety of movement sequences with the adult, objects can be introduced into the movement sequences. For example, teacher and child might co-actively get blocks from a box, carry them to the table, and place the blocks on the table. Through this type of activity, the constructive use of objects and interactive play are stimulated. The child learns about objects in relation to his or her body and movements, thus helping him use the body as a tool for exploring the world.

When the child can follow a series of co-active symmetric and asymmetric movements, *nonrepresentational reference* activities are initiated. The purposes of these activities are to build body image and to teach the child that the body can be represented. Initially, the teacher points out parts of his or her own body and indicates to the child to duplicate the pointing that is being modeled. Once the child displays consistent nonrepresentational reference movements with the teacher as a model, the teacher may introduce a doll as a model. The doll-as-teacher model then shifts to a clay figure-as-doll model and finally to a paper/pencil or chalkboard stick figure representation of the body. Again, each model and the child are separated in space, but the model remains for the child to duplicate. The purpose of these activities is to develop body image, to teach pointing, and to help the child become aware that the body can be represented.

The third stage of Van Dijk's communication program is [redacted] Here there is separation in both time and space. The teacher may display a certain movement pattern, stop the movement, and wait for the child to duplicate the pattern (i.e., receptive deferred imitation), or the child may initiate the same activity, providing the expressive cue (i.e., expressive deferred imitation). The key difference between co-active movement and deferred imitation, then, is that in deferred imitation whatever model is used is no longer available for the child to duplicate. For example, if one were using chalkboard stick figures as representation, the teacher would draw the stick figure model, ask the child to look at the model, erase the model, and ask the child to duplicate what he or she saw. In this situation, then, the child must defer movement until after the model is no longer available.

A communication device used throughout the co-active movement and deferred imitation stages is *anticipation shelves*. Typically, these are sequences of connected cubicles, each cubicle representing a different activity during the school day. Within each cubicle will be placed an object the child will associate with the specific activity (e.g., a cup representing lunch). Just prior to each activity, the child is requested to get the appropriate object (initially this will be done through physical guidance), and then the child proceeds to the related activity. Once the child is finished with this activity, he is directed toward putting the object back onto the appropriate shelf or into a "finished box." During co-active movement, the major purpose of the shelf is to have the child associate the object with the physical movement toward the corresponding activity; in deferred imitation, the purpose is to have the child associate the object with the actual activity. The anticipation shelves procedure is consistently repeated, and the procedure helps the child structure the day, teaches the function of objects, and helps the child make transitions from one activity to another. The progression of different nonrepresentational reference models in the co-active movement and deferred imitation stages from concrete to abstract is also evident in the anticipation shelves. One initially starts with objects, then proceeds to predrawn pictures or photographs of the objects, and finally to graphic or line drawings of the objects. Again, before the child can use an abstract representational system (language), he or she must become aware that things can be represented.

Resonance, co-active movement, and deferred imitation should not be looked upon as procedures to be used in an isolated activity approach; they must be infused into a child's total program. For example, if the child is in the co-active communication level, everything that happens during the day should be done co-actively (e.g., washing hands, moving charts to a table, etc.). Given the supraordinate nature of communication, its relationship to other ecological events must be stressed.

As a result of a child's progression through deferred imitation, *natural gesture construction* will become evident. This phase serves as the transition from reference to representation. Here the child learns that refined body movements can be used to communicate. This realization is necessary in order for the child to move from the concrete to the abstract, and to understand the future use of symbols and language. Natural gestures are, by definition, those that are self-developed. As such, they are not really amenable to procedural development. Initially, the gestures will represent what the child can do with the object (performative function—e.g., tearing motion for paper, throwing motion for ball, etc.) to what the object looks like (referential function—e.g., spherical hand motion for ball). Again, it is extremely important that whatever natural gestures are constructed reflect a motor behavior that the child has consistently exhibited. In the beginning of the natural gesture phase, the gestures are truly unique to the child and do not actually have meaning to anyone else. Therefore, the purpose of the initial natural gestures may be self-communication (i.e., receptive and expressive communication *within* the individual). Later, these gestures will be used upon request and then for the purpose of expressive (to other) communication.

AN ASSESSMENT PROCEDURE

Our description of the stage-to-stage Van Dijk communication procedure represents the presymbolic levels of a systematic training approach to use with prelanguage individuals. As in all sequential training programs, it is necessary to determine where an individual falls within the sequence prior to any formal instruction. Miller (1974) supports an assessment procedure that includes measures of cognitive, receptive language, and expressive language behaviors as a necessary step prior to the implementation of any communication program. Given the relationship between cognition, communication, and language (Furth, 1970, 1971; Moorehead & Ingram, 1973; Cromer, 1974), determining in which Van Dijk stage an individual belongs will require an in-depth developmental assessment. Although Van Dijk's communication program represents *procedures* to be followed and as such should be used as a flexible tool for facilitating communication development in prelinguistic children, the obvious correlation between the discrete stages and theoretical levels of cognition (e.g., Piaget's sensorimotor stages) cannot and should not be avoided.

The Callier-Azusa scale (Stillman, 1978) is an example of an appropriate developmental assessment tool which can be used in determining communication levels and corresponding instructional procedures for the severely/profoundly handicapped. Sections of the scale measure cognitive development, receptive communication, and expressive communication. Figure 1 displays a list of selected behaviors from these three targeted areas. Given Van Dijk's procedural stages, the selected behaviors have been collapsed per level. By observing an individual's performance across the targeted areas, one can determine the communication level that basically fits the observed behavioral profile. A word of caution is necessary at this juncture, however. The displayed relationship between Van Dijk's levels and area behaviors is still hypothetical. Only through a more definitive depiction of cognitive and communication behaviors and researched interactions between those assessed behaviors and communication levels can a true assessment-to-programming model be formulated.

CONCLUSION

Although the Van Dijk program has been used extensively in the Netherlands, problems in translations and visibility have somehow stymied its

Figure 1 Cognitive and communication indices of Van Dijk's levels

Van Dijk levels	Cognitive behavioral indices	Receptive communication indices	Expressive communication indices
Preresonance	Random body movements Behavior changes when stimulated orally, visually, tactually Repetitive movements; focus on own body	Movements not in response to stimulation Changes behavior when stimulated Repeats movements; focus on own body	Undifferentiated cry Different movements/vocalizations for specific discomforts
Resonance	Participates in another's modification of his or her environment Reacts to/recognizes familiar activity Purposeful activity with objects Duplicates another's movement while in physical contact with another	Responds to another's cues by participating in movement modification Repetitive behaviors on objects; focus on what happens to the object	Gives indication of recognition of familiar person/object Participates in familiar motion after teacher initiation; physical contact necessary Signals teacher to continue activity
Co-active movement	Briefly remembers where object is located after interruption Imitates familiar movements as long as model present Explores new objects Familiar toy leads to familiar action on toy Actively searches for hidden object Combines separate behaviors to reach desired end Anticipates routine event from cues	Comprehends tactile signals for movement Anticipates next movement in sequence	Imitates movements after teacher stops movement as long as teacher provides cue by her position Uses multiple signals to continue activities Duplicates different movements while teacher is moving; no physical contact necessary
Deferred imitation	Looks for object in place where last saw object Imitates new behavior while behavior is being modeled Knowledge of object/function relationships Duplicates sequence of movements after sequence is modeled Uses gestures for objects as long as object is present	Understands simple gestural commands; no physical cues necessary Anticipates routine event from cues Understands gesture for object provided gesture focuses on use of object and object is present	Imitates movements after teacher finishes movement; no cues necessary Has gestures that are specific to certain situations; no generalization Imitates new movements after teacher finishes modeling movements
Natural gestures	Imitates activity sequence after considerable time lapse Goal-directed activity Uses gestures for objects in absence of objects	Understands gestures for objects provided gesture focuses on use; object need not be present	Uses gestures for objects/activities across various situations; generalization Uses gestures instead of pointing

use here. Given the priority focus of special education services for the severely and profoundly handicapped and the need for effective and efficacious communication programming for this population, the Van Dijk program represents at best a panacea, and at least a definitive approach to dealing with the prelanguage individual.

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From Reflex to Symbol: Describing, Explaining, and Fostering Communicative Competence

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The manner in which communicative competence develops during the first two years of life is described with particular emphasis on how caregiver-infant interactions and both the clarity and "readability" of infant behavior contributes to the acquisition of communicative abilities. A seven level model of communication is described which permits different forms and modes of communication (e.g., voice synthesized language) to be taken as indicators of certain levels of competence. The implication of the model for both assessment and intervention purposes is discussed. Several techniques (conditional interactions, interactive coaching, and incidental teaching) that can be used for fostering communicative competence are reviewed.

A communicative exchange occurs each and every time two or more people are together and the behavior of one person evokes, maintains, or modifies the behavior of another person. It matters not what form (nonverbal, verbal, sign language, augmentative device, etc.) the communicative behavior takes, but that the behavior *affects* the behavior of another person, is *understood* by that person, and is *responded to* in a manner that leads to a desired outcome.

For the communication learning child, progress toward mastery of social-communicative competence begins at birth and continues until the child is capable of the use of some type of symbol system as the principle mode of communication. This symbol system may be either verbal or nonverbal, conventional or nonconventional, as long as it provides the child with a means to communicate with others as effectively as possible.

The purpose of this paper is to describe the manner in which communicative competence develops during the first two years of life with particular emphasis on how caregiver-infant interactions and both the clarity and "readability" of infant behavior contributes to the acquisition of communicative competence. The paper is divided into three sections: (a) a brief description of the readability hypothesis, (b) a description of a model of communicative development, and (c) a description of the implications of the readability hypothesis and model of communication for fostering the acquisition of communicative competence among communication-impaired children.

Readability of Infant Behavior

The extent to which an infant produces distinctive, readable behavior determines to a large degree the manner in which his/her parents are likely to respond to the behaviors as "intents" to communicate. Goldberg (1977) defined readability as:

> the extent to which an infants' behaviors are clearly defined and produce distinctive signals and cues for adults. In practical terms, readability refers to the ease with which the adults can say "he's tired, looking at me" etc. An infant who is easily "read" enhances adult feelings of efficacy. (p. 171)

According to Goldberg (1977), the acquisition of social-communicative competencies occurs under the following conditions:

> As the adult monitors infant behavior, the ability to make decisions about interventions is a joint function of parent feelings of effectiveness and infant *predictability* and *readability*. When infants are highly predictable and readable, parents are able to arrive at decisions quickly, make decisions easily, and have a high probability of making appropriate decisions. Note that this condition enables the parent to act in precisely the fashion that provides a high level of contingency experience for the infant. (p. 173, italics added)

Goldberg goes on to describe the circumstances which attenuate parent-infant interactions:

> When the infant is unpredictable and difficult to read, decisions require a longer time, are difficult

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> to make, and are less likely to be appropriate. Hence, the adult is likely to behave in a fashion that results in a low level of contingency experience for the infant. (pp. 173–174)

Thus, in instances where the infant responds to adult interventions in an expected manner, the caregiver's sense of efficacy is enhanced and (s)he is more likely to sustain ongoing interactions and initiate other interactions. This in turn is likely to increase the probability of the infant's acquisition of communicative competencies. Conversely, where the infant is unresponsive, the caregiver's feelings of efficacy are diminished; (s)he is less likely to initiate and/or respond to communicative bids by the infant; and there is a decrease in the probability of the infant acquiring communicative competencies. Thus, the extent to which the infant acquires "readable" behaviors that can be interpreted as communicative bids should enhance the child's acquisition of communicative competence. For the communication-impaired child, readable means the use of interactive behavior, regardless of its form or mode, that approximates conventionalized behavior in the culture in which the child is a member (e.g., using a symbol board as a basis for "verbalizing" needs).

A Developmental Model of Communicative Competence

The following is a description of a model of early communicative competence that integrates, synthesizes, and elaborates upon available descriptions of the genesis of nonverbal and verbal communicative behavior (Bates, 1976; Bates, Benigni, Bretherton, Camaioni, & Volterra, 1977; Bates, Camaioni, & Volterra, 1975; Bruner, 1974–1975, 1977; Dore, 1975; Sugarman-Bell, 1978). The model describes seven sequential levels of communicative competence. The specific behaviors that characterize each level define progressively more complex behavior competencies that reflect increased readability of the infant's behavior.

Six criteria are used to assign behaviors to the different levels of development. The six classificatory dimensions are: (a) the degree to which the infant is *aware* of environmental events, (b) the infant's ability to attain a *goal* or goal state through sustained interactions with the environment, (c) the degree to which the behavior is *culturally defined* and thus has social and conventional readability, (d) the extent to which the child *intentionally* uses objects to operate on adult attention or uses adults as means to obtain desired objects, (e) the extent to which the communicative behavior is *linguistic* in nature, and (f) the extent to which communicative behaviors are used as *signifiers* for something *signified* in the absence of reference-giving cues. The model of communication together with the classification criteria are shown in Table 1.

Definition of Communication

> The term communication is defined as any overt *conventional or nonconventional behavior*, whether used intentionally or not, that has the effect of arousing in an onlooker a belief that the signal producing organism is attempting to convey a message, make a demand, request, etc. to an onlooker. (Dunst, 1978, p. 111)

Several aspects of this definition are worth noting. First, the definition recognizes the fact that an infant does not have to intentionally attempt to communicate to have his/her behavior interpreted as such. Second, the definition explicitly acknowledges the fact that forms of behavior other than conventionalized verbalizations constitute alternative indicators of communicative competence (e.g., voice synthesized language). To the extent that different forms of behavior meet the criteria of the different levels of communication described below, the attainments may be taken as manifestations of communicative competence. The implications of this broader-based perspective of communication for describing and fostering communicative competence among speech- and language-impaired children is described later in the paper.

Levels of Communicative Competence

The levels of communicative competence specify the progressive differentiations that occur in the infant's acquisition of nonverbal and verbal behaviors. A hierarchial and ordinal (Piaget, 1952; Uzgiris & Hunt, 1975) progression between levels of achievement is assumed.

TABLE 1: A Prototypic Model of Classification of Communication Behavior

Level	Age[a] (Months)	Type of Communication[b]	Classificatory Dimensions[c]					
			Awareness	Goal Directed	Culturally Defined	Intentional	Linguistic	Symbolic
I	0–3	Behavior state	–	–	–	–	–	–
II	1–6	Recognitory	+	–	–	–	–	–
III	3–10	Contingency	+	+	–	–	–	–
IV	8–12	Instrumental	+	+	+	–	–	–
V	10–16	Triadic	+	+	+	+	–	–
VI	12–18	Verbal (C)[d]	+	+	+	+	+	–
VII	18–30	Verbal (DC)[e]	+	+	+	+	+	+

[a] The approximate age range during which the type of communicative behavior is manifested.

[b] See text for the operational definitions of the different types of communicative acts.

[c] A minus (–) indicates that the particular type of communication does not meet the requirements of the classificatory criterion whereas a plus (+) indicates the criterion is met.

[d] Verbal (C) refers to linguistic behavior that is context-bound and depends upon the referent as a basis for elicitation of the behavior.

[e] Verbal (DC) refers to linguistic behavior that is decontextualized and is used to evoke persons, objects, events, describes things not present, etc.

TABLE 2: A Developmental Model of Communicative Competence

Level	Age Range (Months)	Type of Communication	Definition	Examples
I	0–3	Behavior state	Refers to conditions where communicative intent is imputed to behavior during (a) states of arousal, (b) state changes, or (c) modulation of behavior within states.	Quieted when consoled Alerts to voice Roots to find nipple
II	1–6	Recognitory	Behaviors that signal to an onlooker the infant's recognition of objects, persons, or events.	Smiling Laughter Anticipatory feeding response
III	3–10	Contingency	Operant behavior used to initiate, sustain, or maintain the attention of another person.	Lap games Vocalizes attitude Uses procedures
IV	8–12	Instrumental	Socially recognized and defined nonverbal behavior used intentionally to achieve a preselected goal state or attain a desired effect.	Extends arm out Gives affection Waves hi or bye
V	10–16	Triadic	Use of objects to gain another's attention or the use of a person to obtain an object or event.	Points Requests object Offers hand
VI (I)	12–28	Verbal C (I): Single word utterances	Socially recognized and culturally defined words evoked by situational cues.	Labels objects Requests action Names persons Labels action
VI (II)	16–24	Verbal C (II): Two word utterances		Notices person Agent-action
VII (I)	18–30	Verbal DC (I): Two word utterances	Socially recognized and culturally defined words used as signifiers for the signified used to evoke persons, objects, or events.	Requests object Uses negation Agent-Object
VII (II)	24–36	Verbal DC (II): Three word utterances		Agent-object-action Agent-action-object

Table 2 summarizes the major characteristics of each level of development.

Behavior State Communication. Behavior state communication refers to circumstances where *communicative intent is imputed to the infant's nonverbal behaviors during states of arousal* (Korner, 1974; Murray, 1979), *between state changes* (Korner & Thoman, 1970, 1972), *and as a result of modulation of behavior within states* (Blauvelt, 1962; Kaye, 1977). For example, Kaye (1977) found that during feeding, mothers interpret their infant's pauses between sucking bursts as signals of flagging and "jiggle" then to reinstate the sucking behavior. According to Goldberg (1977), the extent to which states of arousal, change, and modulation are interpreted as intents to communicate depends on how easily neonatal behaviors are read and how predictable infants respond to parental interventions.

Recognitory Communication. Recognitory communicative acts are defined as *behaviors that signal to an onlooker the infant's recognition of objects, persons, or events.* Smiling (Hayes & Watson, 1981; Landau, 1973; Watson, Hayes, Vietze, & Becker, 1979), laughter (Sroufe & Waters, 1976), vocalizations (Brown, 1979), generalized excitement upon seeing or hearing a familiar person (Piaget, 1954), and elicitation of the sucking behavior in response to seeing the child's bottle or being placed in the nursing position (Decarie, 1965) are several examples of recognitory acts. The consistent and predictable response to infant behavior on the part of caregivers is a condition that permits the infant to acquire a sense (awareness) of the efficacy of his/her behavior and learn about the behavior propensities of interactive partners.

Contingency Communication. Contingency communicative acts are defined as *operant behaviors used to initiate, sustain, and maintain the attention of another person.* The acquisition of contingency communicative acts appear, in part, to emerge from the type of play which are labeled "lap games" (Field, 1979a; Gustafson, Green, & West, 1979; Rogers, Crawley, Iacobbo, Criticos, Richardson, Thompson, & Friedman, 1976; Ross, 1980). For example, Gustafson et al. (1979) found that the idiosyncratic behaviors of 6-month-old infants are often used to have an adult repeat games like "I'm gonna get you." The infant's use of vocalizations, smiling, generalized excitement, and "procedures for making interesting sights last" (Piaget, 1952; Uzgiris & Hunt, 1975) to initiate a "game" of having an adult make a funny face or sound are several other examples of contingency communicative acts.

Instrumental Communication. Instrumental communicative acts are defined as *intentionally used* (Bruner, 1973; Piaget, 1952), *socially recognized and culturally defined* (Mayo & LaFrance, 1978) *nonverbal behavior where the nonverbal communicative acts are used as a means to achieve or attain a preselected goal or goal state.* Extending the arms out to be picked up (Bates et al., 1975); hugging and other signals of affection (Lewis & Rosenblum, 1978); pointing (Murphy, 1978; Murphy & Messer, 1977); waving; and shaking the head yes or no are examples of instrumental communicative acts.

There is one major characteristic of instrumental communicative acts that makes them different from contingency communicative behaviors, and illustrate the advances over the latter in terms of communicative competence and readability of the behaviors. As a class of behavior, these communicative acts are *conventional, socially recognized, and understood behavior.* In contrast, most contingency communicative acts are idiosyncratic behaviors that are typically understood and having meaning only within the context of intrafamily interactions. Consequently, instrumental communicative acts have better "social and cultural readability."

Triadic Communication. Triadic communicative acts are defined as *intentionally used, socially recognized, and culturally defined nonverbal behaviors that involve either the infant's use of an object to operate on adult attention* (e.g., giving and showing) *or the use of an adult as an intervening agent to obtain a desired object* (e.g., requesting and pointing) (Bates, 1976; Bates et al., 1975; Sugarman-Bell, 1978). The term triadic is used to refer to the fact that the infant, his or her communicative partner, and an object are involved in the performative act.

Several characteristics of triadic communicative acts make them different from communicative behaviors at the preceding levels of development. First, at the triadic level we have for the first time attempts to incorporate both adults and objects simultaneously into communicative exchanges. At all preceding levels, infant communicative behaviors are directed toward either persons or objects but not both concurrently. Second, there is a significant advance with regard to the infant's ability to interpattern gestural, visual, and vocal behaviors which further increases the readability of the infant's behavior (see especially Dunst, 1979, 1980, 1984). At this level, gestures are almost always accompanied by looking at the communicative partner and vocalizing concomitantly with the emittance of the gestural-visual act. For instance, attempts to engage an adult as an intervening agent to obtain a desired goal using pointing as a communicative gesture involves looking at the adult or looking back-and-forth between the adult and object (Bates et al., 1975; Dunst, 1979, 1980; Harding & Golinkoff, 1979; Murphy & Messer, 1977) where there is a high probability of a vocalization accompanying the looking behavior (Carter, 1975; Dore, 1974; Dunst, 1979, 1980; Harding & Golinkoff, 1979; Murphy, 1978).

Verbal Communication (Contextualized). Contextualized verbal communicative acts are defined as *socially recognized and culturally defined words that are intentionally used to signal requests, demands, etc. where the verbal utterance(s) is evoked by situational and contextual cues.* For example, Bloom (1970) describes a situation where a child uses the words "mommy bounce" to have her mother continue a game of bouncing the child up-and-down on a bed—a game which the mother had initiated. Contextualized verbal communicative acts are not considered symbolic behaviors because they tend to be evoked by situational cues as opposed to being used to evoke persons, objects, or events. Ample evidence exists which indicates that in the infant's initial acquisition of verbal competencies, (s)he relies on contextual information to name, refer to, describe, etc. persons, objects, and events (e.g., Leonard, 1976).

Verbal Communication (Decontextualized). Decontextualized verbal communication acts are defined as *socially recognized and defined words that are used as signifiers for some signified persons, object, or event where the words are used to evoke a goal or goal state.* For example, the child's use of the words "want juice" or "where daddy" in the absence of reference giving cues (Flavell, 1963) *to evoke* a person, object, event, response, etc. are examples of decontextualized communicative behaviors. The attainment of decontextualized language abilities corresponds to the terminal state of the sensorimotor period (Piaget, 1951, 1952, 1954). At this point, the cultural and social readability of the child's communicative behavior is well formulated.

Implications for the Communication-Impaired Child

To the extent that any child, regardless of his or her type or degree of impairment, manifests behaviors that meet the criteria for a particular level of functioning, (s)he can be considered to have mastered a certain type of communication competence. It does not matter which form the behavior takes but rather that (s)he demonstrates competence in a manner that permits needs to be made known (see especially Dunst & McWilliam, in press). Thus, one child may be able to verbalize needs, another use sign language, and yet another use an augmentative device (e.g., a symbol board); nonetheless, all these children would have manifested Level 6 communication using different forms of expression.

In contrast to most approaches to assessment/intervention that require children to demonstrate the ability to manifest preselected indicators of communicative competence, the model described above asks the question to what extent does the child's behavior meet the criteria for certain levels of functioning as a basis for determining his/her topography of communication abilities. Thus, for the communication-impaired child, any communicative act may be taken as an indicator of communicative competence, and permit an assessment of his or her level(s) of functioning. The ability to establish the child's communicative competence in turn provides a basis for deciding upon the strategies that can be used to foster the acquisition of other communicative behaviors.

Fostering Communicative Competence

Goldberg (1977) suggests that we can do primarily two things to enhance social-communication interactions among dyads in which the competence of the infant or parent, or both, are less than optimal. The first is to facilitate infant social-communicative competence by increasing the readability of the infant's behavior. The second is to teach parents skills that will help them read infant behavior as intents to communicate and respond to social-communicative competencies in a contingent manner.

Conditional Strategies. Enhancement of the infant's social-communicative competencies can be accomplished primarily in either of two ways. The first is to provide infants with experiences that make social reinforcement contingent upon production of social-communicative behavior (Dunst, 1981; Millar, 1976). In instances where readability is low, the infant can be reinforced for successive approximations of the targeted behavior. Vietze and Anderson (1981) describe procedures for enhancing optimally effective styles of parental interactions. They contend that facilitative efforts should provide the "parent with *conditional* strategies for fostering the child's optimal development. 'Conditional' implies that the selection of a strategy would be based on the parent's increased attention to and understanding of the child's unique characteristics" (p. 278).

The second approach is to provide infants with response-contingent experiences with inanimate objects designed not only to enhance operant behavior but visual, vocal, and social-emotional concomitants as well (Dunst, 1981; McCall & McGhee, 1977; Wachs, 1977; Watson, 1972). This latter approach is particularly appropriate, especially when working with infants for whom few or no social-communicate behaviors are in an infant's repertoire. The efficacy of this approach was demonstrated in several investigations by Ramey et al. (1972, 1975) and his colleagues. In these studies, infants diagnosed as "failure-to-thrive" served as subjects. The infants were tested in a specially designed chamber in an infant seat that faced a wall on which a visual stimulus could be projected. Above the infant seat was a voice-activated microphone which, when the infant vocalized at a preselected intensity level, caused a bright red cross to be projected on the wall facing him/her. The results of the study showed that both the duration and rate of vocalizations emitted by the infants during the conditioning phase of the study were significantly greater than during the baseline phase. Much more interesting, however, were the incidental observations made during the course of the two investigations. In one study (Ramey et al., 1972), it was reported that the quality of vocal behavior changed during the course of conditioning. For one subject, a gutteral sound was replaced by a babbling repertoire; for another subject, vocal behavior changed from a single-to-multiple-sound utterance. Besides quality of vocal behavior, other concomitant behavioral changes also were noted. One subject's listless and apathetic appearance became more positive and "normal." Elimination of gaze aversion and a stereotypic face-covering behavior were reported for another subject. In the other study (Ramey et al., 1975), infants assessed over an extended period of time were found to acquire a fuller repertoire of social and emotional responsiveness. It would therefore seem that the opportunity to engage in vocal response-contingent behavior has the effect of not only fostering vocal behaviors as operants, but enhancing the quality (and consequently the readability) of the child's social repertoire of behavior. Dunst (1981) describes numerous approaches like that used by Ramey and his colleagues for enhancing the infant's acquisition of social-communicative competencies.

Interactive Coaching. Field (1978a, 1978b, 1979a, 1979b) describes a number of strategies which she labels generically as *interactive coaching.* These techniques are designed to enhance caregivers abilities to engage in harmonious, synchronous interactions with their infants. They include attempts to teach parents to read the behavior of their infants as intents to communicate and to respond to the behavior in a contingent manner. One technique involves the caregiver initiating an interaction; waiting until the child emits an engaging behavior; and then responding in a contingent manner. Another is imitation of the infant's behavior as a means of establishing a reciprocal pattern of interaction. Field (1978a), in a review of interactive coaching techniques and their implications for enhancing caregiver as well as infant competencies, notes that although the state of the art knowledge regarding optimally efficacious parent-infant interactions is relatively undeveloped, there are nonetheless strong indications that interventions designed to facilitate the caregiver's ability to read behaviors and respond in a contingent manner can be easily attained.

Incidental Teaching. Beyond the establishment of efficacious interactions using conditional (response-contingent) intervention strategies and interactive coaching, incidental teaching represents a technique that can be used to enhance the acquisition of instrumental, triadic, and verbal communicative competencies. We use the term incidental teaching to refer to interactions that a child has with the animate and inanimate environment which arise either naturally or through afforded opportunities; and where child responsiveness to the environment provides a basis for both sustaining and elaborating on the child's topography of behavior (Dunst & McWilliam, in press). The incidental teaching process simply formalizes adult responses during everyday interactions with the child through use of a systematic series of steps designed to foster progressively more complex forms of social-adaptive competencies. Incidental teaching is not the same as incidental learning. There are specific targets for intervention, and incidental teaching episodes provide the structure for teaching targets each and every time opportunities are afforded. In fact, an incidental teaching opportunity arises everytime the child is in the presence of another person, and the child emits a behavior that can be used to *sustain* and *elaborate* upon the child's topography of behavior.

The steps in our incidental teaching process, together with a brief description of the major objective of each of the steps, are as follows:

1. *Ensure child responsiveness to the environment through provision of opportunities that secure (attention-getting) and maintain the child's attention (attention-holding).* The purpose of this step is to engage the child in attentional interactions with the environment. This can generally be accomplished through arrangement of the environment in such a manner that different stimulus events evoke and sustain attentiveness from the child.

2. *Focus attention on those aspects of the environment that maintain attention.* The purpose of this step is to discern what is maintaining the attention-holding behavior. If the child is paying attention to certain stimulus features, the stimuli must be functioning as reinforcers. Note that this step in the teaching process differs from traditional methods of instruction inasmuch as the teacher focuses on the child rather than having the child attend to the adult who *directs* the learning.

3. *Elicit and sustain the child's interactions with the environment.* The purpose of this step is to engage the child in response-contingent (conditional) interactions where the reinforcers identified in step 2 are made contingent upon the child producing an operant behavior. At this step the focus is not to evoke some preselected response-contingent behavior (unless this is an appropriate target for the child's level of competence), but rather to initiate and sustain interactions that embody contingency awareness, predictability, and controllability. The child should simply be provided opportunities to demonstrate competencies that permit his or her behavior to determine outcomes in a manner that increases the probability of sustaining interactions.

4. *Work for and sustain elaboration in the child's topography of behavior.* According to Hart and Risley (1978), "This step is the focal point of the incidental teaching interaction" (p. 418). The purpose of this step is to produce variations in the child's behavior that successively approximates the particular type and form of behavior targeted to be taught for the context in which the incidental teaching episodes occur. That is, the adult, through systematic efforts designed to evoke differentiated behavior, intervenes in a manner (prompting, modeling, rearranging the environment, etc.) that increases the opportunity for the child to demonstrate the particular type and form of behavior that is being taught.

5. *Work for and sustain conventionalization as part of response elaboration.* The purpose of this step is to evoke conventionalized behavior as part of response elaboration where the conventionalized acts are used as equivalent, yet alternative ways for obtaining a desired goal or goal state (e.g., voice synthesized language as an equivalent to verbal production). Conventionalization in behavior brings the child closer to becoming an adaptive member of his or her particular culture or social group, and thus represents communicative competence par excellence.

Table 3 shows the relationship between the five steps in the incidental teaching process and the seven levels of communication. As can be seen, incidental teaching provides the basis of facilitating both stage-level progress and different forms of communicative competence. To the extent that different communicative competencies are targeted to be taught, incidental teaching provides an instructional method to affect behavior change.

The following is a description of an incidental teaching episode that illustrates the manner in which the teaching process can be used to facilitate targeted behavior. This is an actual case study that arose within the context of a project designed to enhance the communicative competencies of young handicapped children.

> Judy is a 27-month-old handicapped child. Her developmental age is about 12 months. The targeted behaviors for her in terms of communicative competence was the use of conventionalized, nonverbal gestures to initiate interactions with adults and make requests, demands, etc. In this particular incidental teaching episode, the child was sitting on the floor in a preschool classroom (she did not yet walk or locomote in any manner) with several materials within her immediate visual field (a bucket filled with blocks, a toy truck, several wind-up toys, etc.). Judy focused on the bucket which was out of her immediate reach (attentional responsiveness). The teacher noticed her attention-holding behavior to the bucket and moved it within Judy's reach (it was placed between her legs). Judy now noticed the blocks in the bucket and reaches in to take one out. The teacher did the same and demonstrated banging the block repeatedly on top of

TABLE 3: Relationship between Communication and Incidental Teaching

Model of Communication	Incidental Teaching
Behavior state	Ensure engagement
Recognitory	Focus attention
Contingency	Sustain interactions
Instrumental	Work of elaboration
Triadic	Sustain elaboration
Verbal (contextualized)	Work for conventionalization
Verbal (decontextualized)	Sustain conventionalization

the truck which was next to the child. This had the effect of getting Judy to do the same which she seemingly enjoyed (response-contingent interaction). The teacher and child engaged in this "parallel play" for about 20 seconds until Judy accidently dropped the block into the back of the truck which elicited her visual attention to the effect she produced. The teacher also dropped his block into the truck and immediately gave Judy another block which she dropped into the truck (response elaboration). The teacher handed four blocks in a row to Judy, each time the child dropped the blocks into the truck. The teacher then ceased handing the blocks to Judy as a means to evoke further response elaboration. Judy looked up to the teacher and then held her hand out to request a block (conventionalized, triadic communication act). The child then used the socially recognized nonverbal gesture 3 or 4 more times to have the teacher give her a block. On the next request, the teacher failed to respond to elicit further requests from Judy. This had the effect of evoking yet another triadic nonverbal gesture—pointing toward the blocks. Several child requests later, the teacher again did not respond until an attempt at elaboration occurred. This time the child pointed at the blocks, looked at the adult, and emitted a sound ("at") that approximated the conventionalized behavior of using a word to make a request.

In this particular incidental teaching episode, the teacher followed the child's lead (attentiveness to different features of the environment) and successively evoked different response elaborations from the child until she emitted a communicative behavior that approximated a conventionalized word. This entire teaching episode lasted less than two minutes, yet the child's ability to demonstrate communicative competencies was manifested in numerous ways.

Conclusion

Communicative competence is acquired within the context of reciprocal interactions between the infant and his/her caregivers. Caregiver-child interactions provide the basis for enhancing communicative abilities that can be used to initiate and sustain interactions. Thus, caregiver responsiveness to the infant's behavior plays an important role in fostering the child's ability to acquire progressively more efficient modes of communication.

The model of communication presented in this paper was designed to describe seven levels of progressively more efficient modes of communication. The model is especially useful for the communication-impaired child since different forms of communication, and not just conventionalized language, can be used to map a child's topography of communicative abilities. Thus, alternative forms of behavior can be taken as indicators for judging the extent to which different types of communicative abilities have been mastered.

Conditional interactions, interactive coaching, and incidental teaching are several techniques that can be used to enhance communicative competence. Incidental teaching seems especially useful since it can almost always be used as a vehicle to elaborate and work for conventionalization of communicative behaviors. Taken together, the proposed model of communicative competence and methods for fostering communication provide the type of framework for assisting the child in becoming a more social-adaptive member of his or her culture vis-a-vis communicative competence.

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The Association for Persons with Severe Handicaps

Concepts and Issues Related to Choice-Making and Autonomy Among Persons with Severe Disabilities[1]

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This paper discusses issues related to concepts of preferences and choice-making among persons with severe disabilities. Included are suggestions for acknowledging preferences, teaching choice as a decision-making process, and the broader implications of choice-making among persons with severe handicaps as an expression of personal autonomy and dignity. Directions for future research are discussed.

For most persons the ability and opportunity to make choices and decisions is an important and cherished component of their lives. The opportunity to make choices reflects favorably on one's perceived independence, dignity, and self-worth. Expressions of free choice are not only highly valued by our society, but are also protected and encouraged. According to the published literature, however, opportunities to make choices, decisions, and express preferences are conspicuously absent from educational programs for persons who are handicapped (Holvoet et al., 1983), particularly for those who experience severe handicaps. Despite this fact, choice-making among learners with severe disabilities continues to be an area that receives relatively little attention from practitioners and researchers in the field of special education (Guess & Siegel-Causey, 1985; Guess & Helmstetter, in press).

The purpose of this article is to first discuss, briefly, some reasons why choice-making has received relatively little attention in the education and treatment of persons with severe handicaps and, second, to provide a conceptual approach that will direct attention to this area as an important component of future practices. The conceptual approach will include some practical suggestions for teachers of learners with severe handicaps, and will identify areas of analysis for researchers who may be interested in teaching choice-making skills.

Turnbull and Turnbull (in press) point out that independent functioning among persons with handicapping conditions requires access to opportunities in life as well as the capacity to participate in those opportunities. They suggest that the act of choosing how to live one's life is the "catalytic trigger" of independence.

The position of Turnbull and Turnbull is shared by others (Shevin & Klein, 1984; Zeph, 1984) who acknowledge the importance of choice-making among persons with severe disabilities. Nevertheless, there exists among many practitioners and professionals the belief that persons with severe disabilities are not capable of making choices or decisions—or at least the kinds of choices that attending adults would perceive to be in the best interest of the person with a handicapping condition. Indeed, the educational and instructional technology used with learners who have severe handicaps has historically been predicated on a deviancy model wherein educators and other service providers assume to know what will enable the recipients of these efforts to better function in our society. Guess (1984) has referred to current educational approaches with learners who have severe handicaps as the "Let's-fix-it" model, which is primarily oriented toward identifying and teaching deficit skills or remediating perceived deviant behavior.

In the "Let's-fix-it" model instructional objectives are selected for the learner by caregivers, educators, and other service providers. The instructional format is highly structured, carefully controlled, and systematically implemented. Allowing the learner some exercise of choice over lesson content or instructional methodology is not consistent with the model. As pointed out by Guess and Siegel-Causey (1985), "Our perceptions of severely handicapped students, partly as a result of the controlling technology we use in their education and treatment, have diminished our ability to see them as individuals capable of even making a choice, let alone the right choice" (p. 236).

Another issue that mitigates against teaching or allowing choice- and decision-making is the use by some persons of "worst scenario" examples. Following a recent presentation on the topic of choice, one of the authors was confronted by a highly respected professional person in the field of special education who argued that choice-making among persons with severe handicaps is not a viable option. His position centered on an aggressive client who, given the opportunity, would "choose to hit him (the professional person) in the face." It is, of course, easy to identify one or more persons with severe handicaps who, given the opportunity, would make poor choices that might well jeopardize the safety and well-being of themselves or others. It is equally easy, however, to similarly identify nonhandicapped members of our society who have chosen to behave in less than desirable ways. Choice- and decision-making involve responsible actions and the capacity to evaluate one's decisions, as pointed out by Turnbull and Turnbull (in press). Necessarily, the act of choosing, and allowing persons with handicaps to make choices and to express preferences, carries with it a certain element of risk. Yet, this is what personal autonomy is all about, and persons with handicapping conditions have the same right as others to acquire autonomy. They need to learn, as do persons who are not handicapped, that wrong choices can sometimes have unpleasant consequences.

Importantly, persons with severe handicaps must also learn to take individual responsibility when their actions place others at risk. They need to experience the consequences imposed by society when one's behavior jeopardizes the well-being of other members of the community. To deny persons with mentally handicapping conditions the opportunity to make choices based upon the possibility of future inappropriate actions is inconsistent with their rights to be fully participating members of our society. This latter issue is complicated further by the possibility that denial of the opportunity to choose might, itself, precipitate inappropriate behavior towards others. (This will be discussed more fully in a later section.)

Definitions and Attributes

For persons with severe handicaps, variations in developmental achievements and chronological ages indicate a continuum of abilities to understand and express preferences and the decision-making processes required for choice-making. For purposes of practical application, it is useful to categorize levels of preference and choice that may be identified as educational objectives and which are amenable to intervention efforts. It is recognized that attempts to categorize various levels of choice are somewhat arbitrary and reflect, to a great extent, an effort to combine suggestions for instruction with some broader philosophical issues that pertain to personal autonomy. The three categories presented include: a) preferences; b) choice as a decision-making process; and c) choice as an expression of autonomy and dignity.

Preferences

Webster's New Collegiate Dictionary (1981) defines preference as including the "power or opportunity of choosing." Displaying a preference includes three important variables: one's propensity (liking) towards something; one's say (choice) about that item or occurrence; and/or a recognition that options exist. For example, one exhibits preference by turning off the morning alarm and sleeping 5 minutes more (choice); by having toast with peanut butter rather than jelly (liking); or choosing to have breakfast at home rather than stopping at the local fast food restaurant (options). Preferences are exerted by most persons within the composition of one's culture, family background, education, and lifestyle. Displaying preferences is an important aspect of being human, and should be acknowledged among persons with severe handicaps. As discussed by Bogdan and Taylor (1982), however, the use of labels tends to focus attention on the disability rather than recognizing that the person with a disability is simply another person with the same emotions, needs, and interests as other persons. "It (labeling) prevents us from seeing and treating the people so defined as human beings with feelings, understandings, and needs. . .we lose the ability. . .to see the world from their point of view" (p. 222).

Responsiveness to Preferences.

Many children with severe handicaps may be nonverbal and display abnormal reflex patterns and muscle tone that frequently interferes with their ability to communicate clearly with others. Two important aspects of their communication are the opportunity for utilizing nonverbal signals to display preferences and the responsiveness of others to the potential communicative nature of nonverbal behaviors. These conditions are similar to the normal development of communication in infancy which is characterized by nonverbal and primarily reflexive motor behaviors. A brief description of early infant interaction may aid the discussion.

What are the variables that contribute to the recognition of nonverbal behaviors as communicative in nature? How might nonverbal behaviors be incorporated into preference (and choice) responses?

During exchanges with caregivers, infants can initiate, maintain, terminate, and avoid interactions (Stern, 1977; Trevarthen, 1977). These early interactions are essentially based on the infant's eye movements, facial expression, vocal sounds, and body movements. These nonverbal behaviors are often accepted by the caregiver as the infant's expression of preferences and form an integral part of communication development. How does this interaction pattern develop into communication?

When interacting with infants, caregivers "...make the assumption that the infant is attempting some form of meaningful dialogue, and out of this assumption the communication of shared meanings begins to take place" (Newson, 1979, p. 208). From birth, caregivers interpret the behavior of infants as containing wishes, intentions, and feelings. Through constant monitoring, the caregiver interprets the infant's nonverbal signals as communicative in nature. In normal infant interaction, "over and over again, events which are quite accidental and beyond the control of either mother or child, are endowed with significance because of either the way the mother reacts towards the child in light of the event or its effect upon him" (Newson, 1979, p. 212).

Those working with children displaying severe handicaps may need to encourage the use of early prelinguistic behaviors. The communication mode that the child with severe handicaps displays must be recognized, expanded, and integrated into interactions. Service providers interacting with children having severe handicaps must be sensitive to the signals expressed in the same manner that caregivers recognize and respond to similar signals displayed by infants during interactions.

How might nonverbal signals of the child with severe handicaps develop into a mode for communicating preference? The child with severe handicaps may exhibit preferences from the first days of life. He or she may be very active in a dimly lit room and very passive when the same room is very bright. When put in a seated position, the child's arms may pull back towards the chest and a grimace appear on his or her face. This may be an indication of tight muscle tone and a special need to be positioned differently—all building into a preference for one type of position over another. Other nonverbal behaviors may indicate preferences for kinds of food, speed of being fed, temperature of foods, and so forth. It is common for caregivers and service providers to be sensitive to the basic needs of food, comfort, shelter, and the like, and to respond to nonverbal displays as indications of the child's preference behavior within these basic contexts of daily living. However, it is uncommon that such basic preferences are considered in the context of other communicative exchanges.

As stated previously, the communication mode displayed by the child with severe disabilities must be incorporated into interactions. The mode may be speech, but often is sign language, a communication device, gesturing, eye gazing, and so forth. In the initial stages of assisting a child in building a communication mode, one should seek to incorporate personal preferences. For example, this might involve allowing the child to select what bite of food to receive next, whether to wear jeans or cords, and whether to look at a book or play outside. Initially the child may not fully comprehend that his or her nonverbal signals can control the responses of caregivers and can communicate preferences. This is similar to the way that accidental movement patterns of infants can be interpreted with significance by the caregiver and later recognized and intentionally repeated by the infant. By providing consistent responses to the child's nonverbal behaviors and opportunities for utilizing these behaviors in many interactions and environments, a systematic mode for communication of preferences may become meaningful for the child. At some point in time the child may realize "when I look at the item presented, that is the one Mom keeps giving me" or "when I close my mouth Sara takes that scratchy toy away from me but when I smile she brings it back out again."

From an educational perspective, it is important that caregivers and service providers are sensitive to, and recognize, the exhibition of preferences through modes of communication that may or may not include talking. The ability to exhibit preferences begins at the early nonverbal levels of development as caregivers recognize the communication modes of body movements, facial expression, gestures, and the like. These preferences can be built into patterns of interaction that incorporate choice across a variety of daily routines and interactions.

Choice as a Decision-Making Process

The previous sections discussed the importance of identifying and using preferences in the educational programming of individuals with severe disabilities. This process is especially useful with individuals who have limited response repertoires and/or who have not yet developed the ability to make choices.

Choice, as a decision-making process, involves the expression of preferences. It also, however, implies the ability to actively select among two or more alternative conditions. Choosing thus becomes an act, in and of itself, and an indication of the ability to make a decision based upon prior experiences, present needs, and future goals.

Research on choice-making among nonhandicapped persons has shown that grade school students learned sight vocabulary words better when allowed to choose between group or individual instruction (Berk, 1976); and higher rates of working and equivalent learning rates were obtained among elementary age students when they were allowed to choose reinforcers (Hockstra, 1979), or decide how many problems would have to be completed correctly before being reinforced (Felixbrod & O'Leary, 1973).

A series of investigations were conducted at Virginia Polytechnical Institute (Monty & Perlmuter, 1975; Monty, Rosenberger, & Perlmuter, 1973; Perlmuter & Monty, 1973, 1977) to measure the effects of choice on the learning of adults. Among the results it was found that choosing either stimulus or response items enhanced learning, and allowing even limited choices was as effective in enhancing learning as was allowing the individual to choose all the stimuli or responses, if choice was provided early in the session.

Studies that have investigated choice-making among persons with handicapping conditions are limited in number. A study by Lovitt and Curtis (1969) showed that a 12-year-old child with severe emotional problems improved performance on academic tasks when allowed to determine his own criterion level. However, Alexander (1974) found that allowing adolescents with moderate mental retardation to choose their reinforcers, either for the entire session or for each trial, did not lead to higher levels of performance on discrimination or perseverance tasks.

An investigation by Holvoet et al. (1983) indicated a slight facilitative effect on the rate of learning and on correct performance when adolescents with severe disabilities were allowed limited choices of educational activities. It was also found that variation in task choice sometimes did not occur until later sessions. This latter observation supports research (Newhard, 1984) that even some adolescent age students with severe handicaps do not comprehend the concept of choice-making, and that this skill might need to be taught (cf. Wuerch & Voeltz, 1982).

From a practical perspective, choice-making opportunities for persons with severe disabilities have typically involved the selection of reinforcers by students, which are then used by attending adults to further control the instructional environment and the performance of the learner. This limited choice opportunity thus serves as the means for furthering the development of other educational goals (ends). This, of course, is compatible with the controlling technology that is often used extensively with learners who have severe handicaps and is consistent with older "efficiency" arguments to promote higher levels of task performance. There are, however, other opportunities in educational programming that would allow learners to make decisions that lead to a more personal level of choice-making skills and, hopefully, more independent functioning in the environment. This would include, for example, opportunities for learners to choose materials to work (or play) with, settings where learning is to take place, persons to be with, activities to engage in, and so on. These types of opportunities would allow the learner to become a more active participant in the educational process, while at the same time developing personal autonomy and dignity as separate educational goals (to be discussed in the next section).

In the absence of extensive data and research, one can only speculate on the development of decision-making skills among learners with severe disabilities. It seems likely, however, that teaching learners with severe disabilities to make decisions and choices will require extensive programming that should start at the preschool level, and extend throughout (and possibly beyond) the public school years.

The actual procedures for teaching choice- and decision-making skills offer a unique challenge to both curriculum designers and researchers. Considerations for teaching these skills include selection of response modes to express choices, the identification of age-appropriate areas where choices and decisions should be made, and the instructional procedures that could most effectively teach this concept. Wuerch and Voeltz (1982), for example, have included instruction on choice-making as an important component of their leisure skills training program for persons with severe disabilities. More recently, Guess and Helmstetter (in press) have included the teaching of choice as a basic instructional component of the Individualized Curriculum Sequencing model for students with severely handicapping conditions. In this model, choice-making is taught within the context of other naturally occurring activities during classroom educational programs and is perceived as an important IEP objective for students in the development of personal autonomy.

Zeph (1984) has presented a model that allows teachers of students with handicaps to incorporate choice-making as a process for arriving at curriculum decisions. Shevin (1984) has provided guidelines and suggestions for teaching choice-making in the classroom to students with severe handicaps. He also discusses the role of applied behavior analysis in fostering choice-making skills.

Choice as an Expression of Autonomy and Dignity

In the course of a day, most of us make hundreds, if not thousands, of choices. Some may be as insignificant as whether we will have yogurt or cereal for breakfast, while others may have broader implications such as whether or not to quit our job, buy a new car, or move to another city. Each choice we make is an expression of our personal autonomy—our freedom to define who we are and what we value. The opportunity to make choices provides us with power to determine, to a great extent, what happens to us on a moment-by-moment basis as well as over the span of our lives. To have the power to make choices taken away would, for many of us, be devastating if not unbearable.

The importance of experiencing a sense of control over one's environment is particularly emphasized in the literature dealing with the phenomenon of *learned helplessness*. Learned helplessness is thought to result from a belief that nothing that one does makes a difference (Seligman, 1975). Persons who experience helplessness characteristically see no relationship between actions and outcomes; their perception of their ability to change life circumstances is severely distorted; and they frequently manifest passivity, negative expectations, and tendencies to self-deprecation (Hooker, 1976). According to Seligman (1975), persons who are particularly susceptible to learned helplessness are those who are most prone to denial, or loss, of control. Included in Seligman's list of susceptible populations are: the elderly, the institutionalized (medical hospitals, mental hospitals, prisons, concentration camps), minorities such as Native Americans, blacks, and Mexican-Americans, and persons who suffer from extreme poverty, abuse, and overcrowding. Among other symptoms, persons who suffer from learned helplessness may experience a variety of debilitating effects including: loss of self-esteem, decreased ambition, emotional disturbance, chronic reactive depression, and even psychogenic death (Frankl, 1963; Hooker, 1976; Seligman, 1975).

What has all this to do with persons who experience severe handicaps? Persons with severe handicaps are probably one of the most vulnerable groups of persons at risk for having their choices limited by others and for experiencing learned helplessness. Persons who are unable to mobilize, bathe, toilet, dress themselves, and communicate their needs are dependent upon others for assistance and, in some cases, survival. Unfortunately, it is not uncommon for caregivers (e.g., parents, teachers, guardians, siblings, personal care attendants) who are attending to a person's physical needs to overlook some less obvious, but very important, personal and emotional needs. These needs may include: to learn to perform a task independently or semi-independently, to experience a sense of accomplishment, to feel in control of the situation by providing input and feedback, and to try (despite the risk of failure), and lastly to fail. Some caregivers might feel that to complete tasks for persons with disabilities is easier and faster than allowing them to do it for themselves; while others may have the attitude that the person already has enough problems coping with his or her disability. Regardless of what the underlying intention is, the result can be to overprotect, to encourage learned helplessness, and to deprive the individual of potentially valuable life experiences. The opportunity to experience the feelings of pride, pleasure, and self-esteem that accompany successful attempts at performing tasks is extremely important to the growth and development of all individuals. Perske (1981) comments on the effect that overprotection of persons with handicaps may have:

> Overprotection may appear on the surface to be kind, but it can really be evil. An oversupply can really smother people emotionally and strip them of their dignity. Overprotection can keep people from becoming all that they can become. Many of our best achievements came the hard way: we took risks, fell flat, suffered, picked ourselves up and tried again. Sometimes we made it and sometimes we did not. Even so, we were given the chance to try. Persons with handicaps need these chances, too. (p. 51)

The goal of treatment for learned helplessness, according to Seligman (1975), should be to expose the person to multiple experiences of control over, and predictability of, environmental events. For instance, Seligman believes that the helpless person should be given maximum control over all aspects of his or her daily life including: ". . .choice of omelets or scrambled eggs for breakfast, blue or red curtains, going to the movies on Wednesdays or Thursdays, whether to wake up early or sleep late" (p. 183). According to Seligman, this level of control may result in longer life spans and greater happiness. Another suggested therapeutic intervention strategy for treating persons with learned helplessness entails assisting the person to realistically assess the parameters of a situation, generate alternatives for action, and determine probable outcomes of these actions (Aguilera & Messick, 1974; Hooker, 1976). Compare the above mentioned approaches with the approaches that are commonly taken with persons with severe handicaps who manifest very similar symptoms.

When persons with severe disabilities become nonresponsive, the assumption is generally made that the reinforcer is no longer salient. At that point teachers or other professionals begin the search for different, effective rewards that will consistently bring and maintain the individual's behavior under control. Seldom, if ever, is the person with the handicapping condition involved in the process of determining how their behavior, or the behavior of those around them, will be modified. The end result is more control for the caregivers and less control for the person being cared for. Ironically persons with handicaps are being treated with the very same "medicine" that made them "ill" in the first place—lack of control over their lives and circumstances.

As much as possible, persons with severe handicaps need to have the events in their day arranged to maximize contingent experiences. Contingent experiences refer to environmental events, both positive and negative, that are directly affected and controlled by the individual. A number of studies in the early 1970s examined the effects of contingent experiences upon learning in infants (Finkelstein & Ramey, 1976; Watson, 1971; Watson & Ramey, 1972). It was concluded in each of these studies that contingent experiences produce a "learning-to-learn" phenomenon and that infants who are exposed to contingent experiences may become more efficient and competent learners than infants who are not (Snell, 1978). Persons with severe handicaps need exposure to contingent experiences so as to enhance their learning potential as well as to prevent, or in some cases overcome, depression and helplessness. This means building independence, choice, and control into daily activities and routines that are largely characterized by dependence on others. Every available opportunity to express preference, choice, and dominance needs to be identified and capitalized on. Elizabeth Boggs (1978), a mother of a son with severe handicaps, recognizes how important this is:

> . . .rather than trying to create a normal environment for my son, I try to think of how the world must look from his point of view, and what kind of environment would not only minimize his boredom and loneliness but enhance his sense of dominance. . . (p. 62)

Outcome Measures and Research Directions

As noted earlier in this article, the issues of preferences, choices, and personal autonomy have received little attention in the field of special education, and especially in the area of severe handicaps. Ideologically, attention to these issues represents a departure from existing practices and is likely to be perceived by some persons as threatening to current state-of-the-art technology. Our position is that the ability and opportunity to express preferences, make decisions, and exercise choices are, in themselves, invaluable contributions to adaptive behavior and should be an integral component of the education of persons with severe handicaps. Moreover, it is our position that consistent opportunities to choose and express preferences might well have a positive impact on the learning process (as a means) as well as on the more long term personal development of persons with severe handicaps (as an end result).

As part of the educational process with learners who have severe disabilities, the options to express choice need to be researched as a possible catalyst to classroom (and home) instructional endeavors. Within this context, choice in instructional environments is perceived as an independent variable with diverse manifestations: e.g., choice of instructional materials, place of instruction, tasks to be learned, and so forth. Dependent or outcome measures are identified as consistent with existing practices such as rate of acquisition, generalization, and maintenance of the learned skill over time. The latter two measures (generalization and maintenance) would appear to be especially deserving of investigation given their limited occurrences in existing instructional endeavors. The central question is whether or not providing learners with severe handicaps the opportunity to participate more fully in their educational program (via choice-making) will increase the acquisition and long term use of functional skills in multiple environments.

A second, and certainly more difficult, outcome measure for researchers pertains to the impact of choice- and decision-making on the personal growth and development of persons with severe handicaps. The previous section on personal autonomy and dignity has pointed to some devastating outcomes when opportunities for individuals to choose are severely restricted. For persons with severe handicaps, the opportunities to choose and make decisions are often limited due to perceptions by others of their incompetence, assumptions of the technology used in their educational programming, and the environments in which many of them reside. Thus, the appropriate research questions center on what happens to a special population of individuals (persons with severe handicaps) when their opportunities to express preferences and choices are first acknowledged, and then provided (or taught).

Independent variables for this type of research would include a number of complex and interrelated factors such as: assessments of the extent to which choices and decision-making opportunities are provided across and within environments (and settings in those environments); the nature and conceptual bases of training programs and curricula used with persons who are severely handicapped; and the personal attitudes towards choice-making (and autonomy) by those caregivers and instructors who provide the training. Preliminary findings from an ongoing project at the University of Kansas, for example, have shown that few parents of adolescent students labeled severely or moderately handicapped have even considered choice- and decision-making as viable options for their children. Does this finding reflect the disability level of their children? Or, is this also an outcome of professional attitudes and practices that, over the years, have failed to acknowledge choice- and decision-making as important educational outcomes for persons who have severe disabilities?

Dependent or outcome measures of the impact of allowing choice- and decision-making on the personal growth and development of persons with severe handicaps provides an even greater challenge to researchers. This is due to the more qualitative types of variables that might be measured, such as indices of self-satisfaction, perceived competence by others, self-initiated behavior, and success in community living.

All of these indices relate directly, or indirectly, to concepts of self-esteem, autonomy, and other quality of life factors. The use of qualitative analytic techniques would be useful for investigations of this nature. As discussed by Switzky and Haywood (1985), "qualitative analytic techniques focus on the perceived world views of the retarded persons themselves in the context of their past and present situations" (p. 270).

Qualitative research techniques have been used to study the perception of persons with mental retardation in the areas of sexuality (Heshusius, 1982) and community adjustment (Taylor & Bogdan, 1981). The use of these research techniques to investigate choice- and decision-making opportunities would appear to be a viable extension of the methodology.

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Video

1. **My Turn, Your Turn** 24 Minute Color VHS
Susan Gandall $125.00
University of Washington Press 1987 #730323
P.O. Box 50096
Seattle, WA. 98145-5096 Communication Interaction

2. **Getting In Touch** 19 Min. Color VHS
Research Press
2612 N. Mattes Ave $150.00 1989
(217) 352-3273
Champaign, IL. 61821 Working With Dual Sensory Impaired

Cassette Program

1. **Activity Program for Body Awareness, Contact And Communication**
M. And C. Knill $29.95
Communication Skill Builders
3830 E. Bellevue
P.O. Box 42050
Tucson, AZ. 85733 3 Cassettes and Curriculum
(602) 323-7500

Human Resources

1. **Ann McKay**
   Macomb County,Michigan, ISD
   44001 Garfield
   Mt. Clemens, MI. 48043
   (313) 286-8800

   Movement Based Language
   Van Dijk Model
   (Resonance - Co-Active)

2. **Ann Perrault, Myomassologist**
   Wayne County, Michigan ISD
   Riley Center
   Special Projects Unit
   9601 Vine
   Allen Park, MI. 48101
   (313) 928-0408

   Relaxation, reduction of pain
   emotional releases
   therapeutic massage

3. **ADAMLAB**
   Wayne County, Michigan ISD
   33500 Van Born Rd.
   Wayne, MI. 48184
   (313) 467-1610

   Greg Turner, Director
   Jan Jarrell, Computer Programmer
   WOLF VOCA Information
   "Everyone Communicates!"
   Vocabulary Information

Assessments

1. **Comprehensive Communication Profile**
   Arkwright and Ellis
   Wayne County, Michigan ISD
   Special Projects Unit
   9601 Vine
   Allen Park, MI. 48101
   (313) 928-0408

2. **P.A.I.P. The Preverbal Assessment - Intervention Profile**
   Patricia Connard, PhD.
   A.E.I.E.P.
   3216 N.E. 27th Ave.
   Portland, OR. 97212

3. **HELP - Hawaii Early Learning Profile**
   Vort Corporation
   P.O. Box 60880
   Palo Alto, CA. 94306

4. Classroom Language Inventory
Chris Kozel
Wayne County, Michigan ISD
Special Education
33500 Van Born Rd.
Wayne, MI. 48184
(313) 467-1610

Curriculums

1. Washtenaw SMI/SXI Curriculum
Jill England
Washtenaw County, Michigan, ISD
1819 S. Wagner Rd.
Ann Arbor, MI. 48106-1406
(313) 994-8100

2. Comprehensive Communication Curriculum Guide
Early Childhood Institute
University of Kansas
Kansas, 1981

Communication Catalogs

These companies seem to have the most up to date, state of the art equipment, assessments, activity packets, etc. I strongly recommend that you send each a postcard requesting to be put on their mailing list.

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Quiz Answers

Myths sometimes cloud reasoning and prompt reactions that should be the opposite.

Such is the case of the quiz.

Contrary to what we may believe to be true, all of the statements in the quiz are false.

Questions regarding any of the statements should be directed to Augmentative Communication Team members.

See Augmentative Communication Quiz, Page 71.